```
=> file reg
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DICTIONARY FILE UPDATES:  12 JUN 2007  HIGHEST RN 937161-92-7

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http://www.cas.org/support/stngen/stndoc/properties.html

=> file hcaplu
FILE 'HCAPLUS' ENTERED AT 11:22:00 ON 13 JUN 2007
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FILE COVERS 1907 - 13 Jun 2007  VOL 146 ISS 25
FILE LAST UPDATED: 12 Jun 2007  (20070612/ED)

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 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> d que
L3          2075 SEA FILE=REGISTRY ABB=ON  PBI/PCT
L6        130069 SEA FILE=REGISTRY ABB=ON  333.401.37/RID
L7          1434 SEA FILE=REGISTRY ABB=ON  L6 AND PMS/CI
L10               STR
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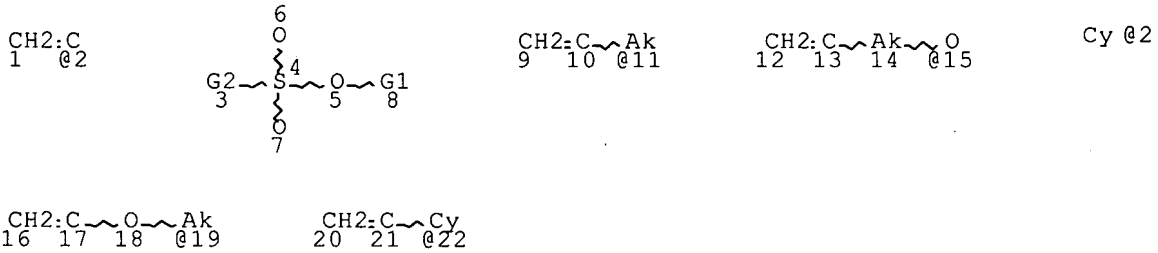


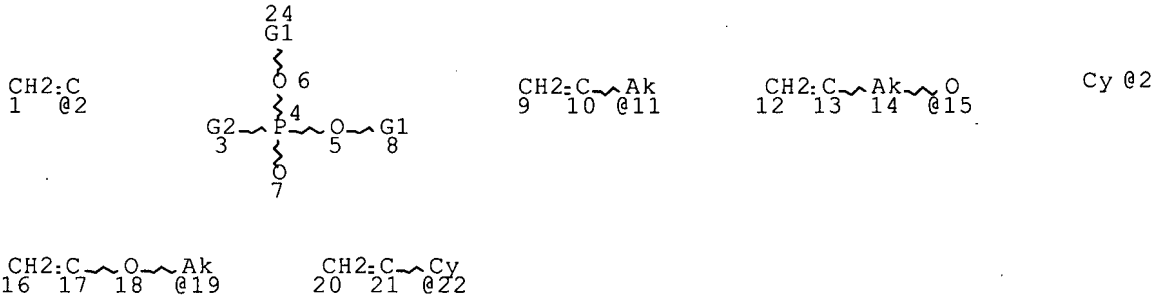
Page 1-A

3

Page 1-B
VAR G1=H/AK/23
VAR G2=2/11/15/19/22
NODE ATTRIBUTES:
CONNECT IS E1 RC AT 6
CONNECT IS E1 RC AT 7
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 22
GGCAT IS UNS AT 23
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 23

STEREO ATTRIBUTES: NONE
L12 6921 SEA FILE=REGISTRY SSS FUL L10
L14 17467 SEA FILE=REGISTRY ABB=ON PSU/PCT
L17 STR



Page 1-A

3

Page 1-B
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VAR G2=2/11/15/19/22
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CONNECT IS E1 RC AT 7

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DEFAULT MLEVEL IS ATOM
GGCAT    IS UNS  AT  22
GGCAT    IS UNS  AT  23
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  24

STEREO ATTRIBUTES: NONE
L22         1671 SEA FILE=HCAPLUS ABB=ON  L3
L23         1472 SEA FILE=HCAPLUS ABB=ON  L7
L24         4062 SEA FILE=HCAPLUS ABB=ON  L22 OR L23 OR POLYBENZIMIDAZOL?
L25            1 SEA FILE=REGISTRY ABB=ON  (L3 OR L7) AND L12
L26            2 SEA FILE=REGISTRY ABB=ON  L6 AND L12
L27            2 SEA FILE=REGISTRY ABB=ON  L25 OR L26
L28        11071 SEA FILE=HCAPLUS ABB=ON  L12
L29           20 SEA FILE=HCAPLUS ABB=ON  L24 AND L28
L30          294 SEA FILE=HCAPLUS ABB=ON  L28 AND (POLYAZOL? OR POLYSULPHONE?
                 OR L14)
L31          161 SEA FILE=HCAPLUS ABB=ON  L30 AND (MEMBRANE# OR PLASTIC?/SC,SX
                 OR POLYMER?/SC,SX)
L32           36 SEA FILE=HCAPLUS ABB=ON  L31 AND MEMBRANE?
L33            0 SEA FILE=HCAPLUS ABB=ON  L31 AND PEM
L34           36 SEA FILE=HCAPLUS ABB=ON  L32 OR L33
L35         2924 SEA FILE=HCAPLUS ABB=ON  L28(L)PREP/RL
L39           65 SEA FILE=REGISTRY SUB=L12 SSS FUL L17
L40           39 SEA FILE=HCAPLUS ABB=ON  L39
L41            0 SEA FILE=HCAPLUS ABB=ON  L40 AND (POLYAZOL? OR POLYSULPHONE?
                 OR L14)
L42            0 SEA FILE=HCAPLUS ABB=ON  L40 AND (POLYAZOL? OR POLYSULFONE? OR
                 L14)
L43          399 SEA FILE=HCAPLUS ABB=ON  L28 AND (POLYAZOL? OR POLYSULFONE? OR
                 L14)
L44          116 SEA FILE=HCAPLUS ABB=ON  L43 AND MEMBRANE?
L45           17 SEA FILE=HCAPLUS ABB=ON  L35 AND L44
L46            2 SEA FILE=HCAPLUS ABB=ON  L24 AND L40
L47            1 SEA FILE=HCAPLUS ABB=ON  L27
L48           61 SEA FILE=HCAPLUS ABB=ON  L29 OR L34 OR L41 OR L42 OR L45 OR
                 L46 OR L47
L51         1124 SEA FILE=REGISTRY ABB=ON  1184-84-5/CRN
L52          350 SEA FILE=REGISTRY ABB=ON  1746-03-8/CRN
L53           30 SEA FILE=REGISTRY ABB=ON  L51 AND L52
L54           19 SEA FILE=HCAPLUS ABB=ON  L53
L55            2 SEA FILE=HCAPLUS ABB=ON  L24 AND L54
L56            0 SEA FILE=HCAPLUS ABB=ON  L54 AND (POLYAZOL? OR POLYSULFONE? OR
                 L14 OR POLYSULPHONE?)
L57           61 SEA FILE=HCAPLUS ABB=ON  L48 OR L55 OR L56
L58            4 SEA FILE=HCAPLUS ABB=ON  L54 AND MEMBRANE?
L59           63 SEA FILE=HCAPLUS ABB=ON  L57 OR L58
L61           44 SEA FILE=HCAPLUS ABB=ON  L59 AND (1840-2002)/PRY,AY,PY
L63            3 SEA FILE=HCAPLUS ABB=ON  L61 AND (PT OR PLATINUM)
L64           44 SEA FILE=HCAPLUS ABB=ON  L61 OR L63
L65            4 SEA FILE=HCAPLUS ABB=ON  L24 AND ?VINYLSULFONIC? AND ?VINYLPHOS
                 PHONIC?
L66           46 SEA FILE=HCAPLUS ABB=ON  L64 OR L65


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L66 ANSWER 1 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2007:461926 HCAPLUS Full-text
DN 146:465265
TI Surface-structured membranes, catalyst coated membranes and membrane electrode units
IN Thate, Sven; Kress, Ria
PA BASF A.-G., Germany
SO Ger. Offen., 19pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 102005051162	A1	20070426	DE 2005-102005051162	20051024
WO 2007048712	A2	20070503	WO 2006-EP67345	20061012

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRAI DE 2005-102005051162 A 20051024

AB The invention concerns an ion-conductive polymer electrolyte membrane, developed from a surface area with a uniform thickness with a first surface on the top side of the surface area and a second surface on the lower surface of the surface area, developed from a first polymer electrolyte membrane material, whereby at least one part contains at least one surface with a three-dimensional structuring, developed from at least a second polymer electrolyte membrane material, whereby first and the second polymer electrolyte membrane materials are the same or different, the structuring is attained by applying the second polymer electrolyte membrane material on the surface area and optionally by further treatment. Also disclosed is a procedure for the production of the ion-conductive polymer electrolyte membrane (MEA) containing at least an ion-conductive polymer electrolyte membrane or a catalyst-coated membrane (CCM), a fuel cell containing at least a foregoing mentioned ion-conductive polymer electrolyte membrane, CCM or MEA, an electrolytic cell, containing at least a foregoing ion-conductive polymer electrolyte membrane mentioned, and the use of at least a foregoing polymer electrolyte membrane mentioned in fuel cell or electrolytic cells.

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 72
ST fuel cell catalyst coated membrane electrode assembly; electrolytic cell catalyst coated membrane electrode assembly
IT Polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(aromatic, sulfonated; surface-structured membranes, catalyst coated membranes and membrane electrode units)
IT Catalysts
(electrocatalysts; surface-structured membranes, catalyst coated membranes and membrane electrode units)
IT Polyoxyphenylenes
RL: TEM (Technical or engineered material use); USES (Uses)
(phosphonated; surface-structured membranes, catalyst coated membranes

and membrane electrode units)

IT **Polybenzimidazoles**
RL: TEM (Technical or engineered material use); USES (Uses)
(phosphoric acid complex; surface-structured membranes, catalyst coated membranes and membrane electrode units)

IT Fuel cells
(polymer electrolyte; surface-structured membranes, catalyst coated membranes and membrane electrode units)

IT Polyphosphazenes
RL: TEM (Technical or engineered material use); USES (Uses)
(sulfonated; surface-structured membranes, catalyst coated membranes and membrane electrode units)

IT Electrolytic cells
Membrane electrodes
(surface-structured membranes, catalyst coated membranes and membrane electrode units)

IT 7664-38-2D, Phosphoric acid, **polybenzimidazole** complex
9003-01-4, Polyacrylic acid 25087-26-7, Polymethacrylic acid
26101-52-0, **Polyvinylsulfonic** acid 26966-22-3, Acrylonitrile-**vinylsulfonic** acid copolymer 27754-99-0, **PolyVinylphosphonic** acid 50979-08-3, Acrylonitrile-styrenesulfonic acid copolymer 54640-82-3, 2-Acrylamido-2-methyl-1-propanesulfonic acid-acrylonitrile copolymer 183867-42-7D, Polyphenylsiloxane, sulfonated 934972-40-4 934972-42-6
RL: TEM (Technical or engineered material use); USES (Uses)
(surface-structured membranes, catalyst coated membranes and membrane electrode units)

L66 ANSWER 2 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2005:1241045 HCAPLUS Full-text
DN 143:478891
TI Manufacture of anisotropic polymer film for membranes
IN Uensal, Oemer; Belack, Joerg
PA Pemeas GmbH, Germany
SO PCT Int. Appl., 56 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2005111123	A1	20051124	WO 2005-EP5283	20050513
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1747248	A1	20070131	EP 2005-760686	20050513
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				
PRAI DE 2004-102004024169	A	20040514		
WO 2005-EP5283	W	20050513		

AB Proton-conductive electrolyte membranes with improved mech. strength are manufactured by guiding **polybenzimidazole** film through a tank filled with liquid containing monomers comprising phosphonic acid groups wherein the polymer is unwound from a reel and wound on another reel. Thus, passing repeatedly (for 3 h) a 55-μm-thick **polybenzimidazole** film through 90% **vinylsulfonic** acid solution at 70° gave 105-μm-thick doped film that was subjected to 99-kJ/kg radiation. The resulting film had E modulus 224 MPa, burst strength 524 kJ/mm2 and elongation at break 51% in machine direction, and 98 MPa, 624 kJ/mm2 and 118%, resp., in the transverse direction.

IC ICM C08J005-18

CC 38-2 (Plastics Fabrication and Uses)

ST proton conductive electrolyte membrane manuf **polybenzimidazole** film **vinylphosphonic** acid

IT **Polybenzimidazoles**
RL: TEM (Technical or engineered material use); USES (Uses)
(films; manufacture of anisotropic polymer film for membranes)

IT Membranes, nonbiological
(manufacture of anisotropic polymer film for)

IT Fuel cell separators
(manufacture of anisotropic polymer film for membranes)

IT Plastic films
(**polybenzimidazoles**; manufacture of anisotropic polymer film for membranes)

IT Electric conductors
(proton; manufacture of anisotropic polymer film for membranes)

IT 1746-03-8, **Vinylphosphonic** acid
RL: TEM (Technical or engineered material use); USES (Uses)
(**polybenzimidazole** film modification agent; manufacture of anisotropic polymer film for membranes)

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 3 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:123117 HCAPLUS Full-text

DN 142:222572

TI Composite solid polymer electrolyte **membranes** for use in electrochemical applications

IN Ofer, David; Nair, Bindu R.; Stoler, Emily J.; Kovar, Robert F.

PA Foster-Miller Inc., USA

SO U.S. Pat. Appl. Publ., 32 pp., Cont.-in-part of U.S. Ser. No. 750,402.
CODEN: USXXCO

DT Patent

LA English

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2005031925	A1	20050210	US 2004-851478	20040522 <--
	US 2002045085	A1	20020418	US 2000-750402	20001228 <--
	US 7052793	B2	20060530		
	WO 2006073474	A2	20060713	WO 2005-US18105	20050520

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RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM,

KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRAI US 1999-261397 A3 19990303 <--
US 2000-750402 A2 20001228 <--
US 1997-57233P P 19970829 <--
US 1999-261349 A3 19990303 <--
US 2004-851478 A 20040522

AB The present invention relates to composite solid polymer electrolyte **membranes** (SPEMs) which include a porous polymer substrate interpenetrated with a water soluble ion-conducting material. SPEMs of the present invention are useful in electrochem. applications, including fuel cells and electrodialysis.

IC ICM H01M008-10
ICS H01M008-00; H01M006-18

INCL 429030000; 429033000; 429314000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): **38**, 72

ST polymer electrolyte **membrane** use electrochem application; fuel cell polymer electrolyte **membrane**; electrodialysis polymer electrolyte **membrane**

IT Polyamide fibers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(aramid; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Polymers, uses
RL: DEV (Device component use); USES (Uses)
(aromatic, ion conductive; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Polyamides, uses
Polyketones
Polysulfones, uses
RL: DEV (Device component use); USES (Uses)
(aromatic, sulfonated; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Polyimides, uses
RL: DEV (Device component use); USES (Uses)
(carboxylated and phosphonated and sulfonated; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Electrochemical cells
Fuel cell electrolytes
Polymer electrolytes
Sulfonation
(composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Polybenzoxazoles
RL: DEV (Device component use); USES (Uses)
(composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT **Polybenzimidazoles**
RL: TEM (Technical or engineered material use); USES (Uses)
(composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Polybenzothiazoles
RL: TEM (Technical or engineered material use); USES (Uses)
(composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Dialyzers
(electrodialyzers, **membranes**; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)

(fluorine- and sulfo-containing, ionomers; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Ionomers
RL: DEV (Device component use); USES (Uses)
(fluoropolymers; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(ionomers; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Liquid crystals, polymeric
(lyotropic; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Ionomers
RL: DEV (Device component use); USES (Uses)
(partially fluorinated; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Synthetic polymeric fibers, uses
RL: DEV (Device component use); USES (Uses)
(polybenzazole, sulfonated; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Polysulfones, uses
RL: DEV (Device component use); USES (Uses)
(polyether-, aromatic, sulfonated; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Polyketones
Polysulfones, uses
RL: DEV (Device component use); USES (Uses)
(polyether-, sulfonated; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Polyethers, uses
RL: DEV (Device component use); USES (Uses)
(polyketone-, sulfonated; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Sulfonic acids, uses
RL: DEV (Device component use); USES (Uses)
(polymers, fluoro; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(polyoxyalkylene-, sulfo-containing, ionomers; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Ionomers
RL: DEV (Device component use); USES (Uses)
(polyoxyalkylenes, fluorine- and sulfo-containing; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Polysulfones, uses
RL: DEV (Device component use); USES (Uses)
(polyphenyl-, sulfonated; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Polyquinoxalines
RL: DEV (Device component use); USES (Uses)
(polyphenylquinoxalines, sulfonated; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Polyethers, uses
RL: DEV (Device component use); USES (Uses)
(polysulfone-, aromatic, sulfonated; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Polyethers, uses
Polyphenyls

RL: DEV (Device component use); USES (Uses)
(polysulfone-, sulfonated; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Polymers, uses
RL: DEV (Device component use); USES (Uses)
(sulfo-containing, fluoro; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT Polyoxyphenylenes
Polysulfones, uses
RL: DEV (Device component use); USES (Uses)
(sulfonated; composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT 9003-01-4, Polyacrylic acid **26101-52-0**, Polyvinyl sulfonic acid 27754-99-0, Polyvinyl phosphonic acid 50851-57-5, Polystyrene sulfonic acid 63496-24-2, Nafion EW 1100
RL: DEV (Device component use); USES (Uses)
(composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT **686768-99-0P 843614-17-5P**
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT 3177-22-8P **25135-51-7P 25667-42-9DP**, Ultrason E, sulfonated 154281-38-6DP, Radel R, sulfonated 220998-11-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(composite solid polymer electrolyte **membranes** for use in electrochem. applications)

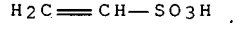
IT 25035-37-4, Poly(1,4-phenyleneterephthalamide)
RL: TEM (Technical or engineered material use); USES (Uses)
(composite solid polymer electrolyte **membranes** for use in electrochem. applications)

IT **26101-52-0**, Polyvinyl sulfonic acid
RL: DEV (Device component use); USES (Uses)
(composite solid polymer electrolyte **membranes** for use in electrochem. applications)

RN 26101-52-0 HCAPLUS
CN Ethenesulfonic acid, homopolymer (CA INDEX NAME)

CM 1

CRN 1184-84-5
CMF C2 H4 O3 S

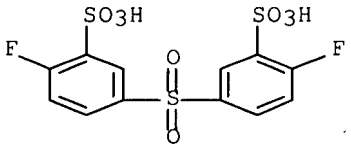


IT **686768-99-0P 843614-17-5P**
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(composite solid polymer electrolyte **membranes** for use in electrochem. applications)

RN 686768-99-0 HCAPLUS
CN Benzenesulfonic acid, 3,3'-sulfonylbis[6-fluoro-, polymer with 4,4'-thiobis[benzenethiol] (9CI) (CA INDEX NAME)

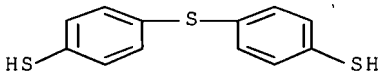
CM 1

CRN 474242-18-7
CMF C12 H8 F2 O8 S3



CM 2

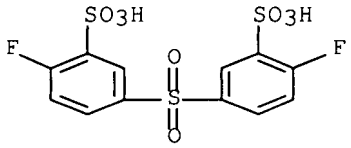
CRN 19362-77-7
CMF C12 H10 S3



RN 843614-17-5 HCAPLUS
CN Benzenesulfonic acid, 3,3'-sulfonylbis[6-fluoro-, polymer with 1,4-benzenediol (9CI) (CA INDEX NAME)

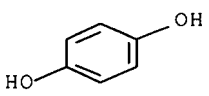
CM 1

CRN 474242-18-7
CMF C12 H8 F2 O8 S3



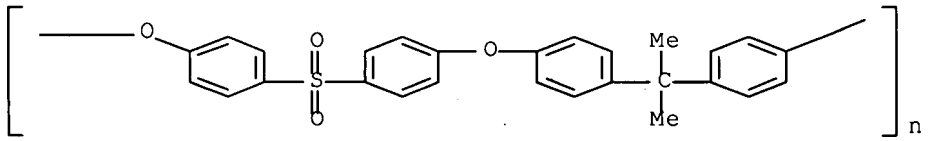
CM 2

CRN 123-31-9
CMF C6 H6 O2

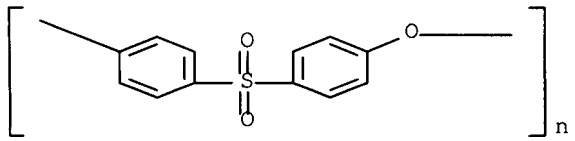


IT **25135-51-7P 25667-42-9DP**, Ultrason E, sulfonated
RL: SPN (Synthetic preparation); PREP (Preparation)
(composite solid polymer electrolyte **membranes** for use in

electrochem. applications)
RN 25135-51-7 HCAPLUS
CN Poly[oxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (CA INDEX NAME)



RN 25667-42-9 HCAPLUS
CN Poly(oxy-1,4-phenylenesulfonyl-1,4-phenylene) (CA INDEX NAME)



L66 ANSWER 4 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2004:856797 HCAPLUS Full-text
DN 141:350862
TI Reactive liquid polymer crosslinking agent and process for preparation
IN Lazar, Warren G.; Clark, James A.
PA USA
SO U.S. Pat. Appl. Publ., 18 pp., Cont.-in-part of U.S. Ser. No. 13,164, abandoned.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004200993	A1	20041014	US 2004-833816	20040427 <--
	US 2003168629	A1	20030911	US 2001-13164	20011210 <--
PRAI	US 2001-13164	B2	20011210 <--		

AB A reactive liquid crosslinking agent for use in the preparation of polymeric substances. The crosslinking agent comprises a substituted 1,3,5-triazine reacted with H2O, an acid alkyl sulfonate and/or phosphonate and a solidifying modifier containing an hydroxyl functional group to form a substituted 1,3,5-triazine hydrate. The reactive liquid polymer crosslinking agent has a solids content between 20-99% solids. The reactive liquid crosslinking agents (RLPC's) are useful as modifiers in the preparation of polymeric compds. which are suitable for 1-component self-crosslinking adhesives, coatings and polymers used in optics, textiles, composites, casting and molding. RLPC systems containing from 1-30% RLPC provide fast single package thermosetting polymeric compds. with enhanced properties such as chemical, heat and abrasion resistance.
IC ICM C09K003-00
INCL 252182130
CC 37-6 (Plastics Manufacture and Processing)

ST triazine hydroxy compd sulfonate crosslinking agent
IT Polyvinyl acetals
RL: POF (Polymer in formulation); USES (Uses)
(formals; reactive liquid polymer crosslinking agent)
IT Adhesives
(hot-melt; reactive liquid polymer crosslinking agent)
IT Urethane rubber, properties
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(hydroxy-terminated, Morthane CA 116; reactive liquid polymer crosslinking agent)
IT Crosslinking agents
(modified triazine; reactive liquid polymer crosslinking agent)
IT Polyimides, uses
RL: POF (Polymer in formulation); USES (Uses)
(polyether-; reactive liquid polymer crosslinking agent)
IT Polyethers, uses
RL: POF (Polymer in formulation); USES (Uses)
(polyimide-; reactive liquid polymer crosslinking agent)
IT Polyoxyalkylenes, uses
RL: MOA (Modifier or additive use); USES (Uses)
(reaction products with triazine and sulfate ester or sulfonate; reactive liquid polymer crosslinking agent)
IT Coating materials
(reactive liquid polymer crosslinking agent)
IT Fluoropolymers, uses
Polyamides, uses
Polysulfones, uses
Polyvinyl butyrals
RL: POF (Polymer in formulation); USES (Uses)
(reactive liquid polymer crosslinking agent)
IT Acrylic polymers, properties
Epoxy resins, properties
Polybenzimidazoles
Polyesters, properties
Polyoxyalkylenes, properties
Polyurethanes, properties
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(reactive liquid polymer crosslinking agent)
IT Plastic foams
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(reactive liquid polymer crosslinking agent)
IT 57-50-1D, Sucrose, alkylglycosides, reaction products with triazine and sulfonylzirconate 98-11-3D, Phenylsulfonic acid, reaction products with triazine and diethylene glycol 107-21-1D, Ethylene glycol, reaction products with triazine and sulfonyltitanate 108-78-1D, 2,4,6-Triamino-1,3,5-triazine, reaction products with phenylphosphoric acid 110-63-4D, 1,4-Butanediol, reaction products with triazine and phosphatotitanate 111-46-6D, Diethylene glycol, reaction products with phenylsulfonic acid and triazine 504-63-2D, 1,3-Propylene glycol, reaction products with triazine and sulfonate 629-11-8D, 1,6-Hexanediol, reaction products with triazine and phosphatotitanate 1571-33-1D, Phenylphosphonic acid, reaction products with triazine 5606-17-7D, reaction products with sulfonate and propylene glycol 5606-19-9D, reaction products with polypropylene glycol and sulfate ester 15214-89-8D, 2-Acrylamido-2-methylpropanesulfonic acid, reaction products with triazine and polyethylene glycol 25322-68-3D, Polyethylene glycol, reaction products with triazine and sulfonate 25322-69-4D, Polypropylene glycol, reaction products with triazine and sulfate ester 89619-91-0D, reaction products with alkylglycosides and sulfonylzirconate

103406-74-2D, reaction products with triazine and ethylene glycol
109766-35-0D, reaction products with triazine and alkylglycosides
111083-74-0D, reaction products with triazine and diol 544651-50-5D,
reaction products with sulfonate and polyethylene glycol 544651-51-6D,
reaction products with phosphate ester and polyethylene glycol
544651-52-7D, reaction products with phosphotitanate and diol
RL: MOA (Modifier or additive use); USES (Uses)
(reactive liquid polymer crosslinking agent)

IT 9002-83-9, Poly(chlorotrifluoroethylene) 9002-84-0,
Poly(tetrafluoroethylene) 9002-86-2, Poly(vinyl chloride) 9002-88-4,
Polyethylene 9002-89-5, Poly(vinyl alcohol) 9002-98-6 9003-01-4,
Poly(acrylic acid) 9003-03-6, Poly(acrylic acid) ammonium salt
9003-04-7, Poly(acrylic acid) sodium salt 9003-05-8, Polyacrylamide
9003-06-9, Acrylamide-acrylic acid copolymer 9003-07-0, Polypropylene
9003-17-2, Polybutadiene 9003-18-3, Butadiene/acrylonitrile copolymer
9003-20-7, Poly(vinyl acetate) 9003-27-4, Polyisobutylene 9003-32-1,
Poly(ethyl acrylate) 9003-39-8, Poly(vinyl pyrrolidone) 9003-49-0,
Poly(n-butyl acrylate) 9003-53-6, Polystyrene 9003-54-7,
Poly(styrene-acrylonitrile) 9003-55-8, Styrene/butadiene copolymer
9003-56-9, Acrylonitrile-butadiene-styrene copolymer 9003-70-7,
Poly(styrene/divinyl benzene) 9004-74-4, Poly(ethylene glycol)monomethyl
ether 9005-08-7, Poly(ethylene glycol) distearate 9005-09-8, Vinyl
chloride/vinyl acetate/maleic acid copolymer 9005-64-5,
Poly(oxyethylene)sorbitan monolaurate 9008-66-6 9010-75-7, Vinylidene
fluoride-chlorotrifluoroethylene copolymer 9010-76-8, Vinylidene
chloride/acrylonitrile copolymer 9010-77-9, Ethylene/acrylic acid
copolymer 9010-98-4, Poly(2-chloro-1,3-butadiene) 9011-13-6,
Poly(styrene/maleic anhydride) 9011-14-7, PMMA 9011-15-8,
Poly(isobutyl methacrylate) 9011-16-9, Vinyl methyl ether/maleic
anhydride copolymer 9016-00-6D, Poly(dimethylsiloxane),
methylsilyl-terminated 9016-06-2, Poly(2-vinylpyridine-n-oxide)
9016-87-9, Poly[methylene(polyphenyl) isocyanate] 9017-27-0 9017-40-7,
4-Vinylpyridine divinylbenzene copolymer 9080-79-9 24936-41-2,
Poly(4-methylstyrene) 24936-50-3, Poly(4-bromostyrene) 24936-53-6,
Poly(p-iodostyrene) 24937-72-2, Poly(maleic anhydride) 24937-78-8,
Ethylene-vinyl acetate copolymer 24937-79-9, Poly(vinylidene fluoride)
24938-67-8, Poly(2,6-dimethyl-1,4-phenylene oxide) 24968-99-8,
Poly(vinyl cinnamate) 24979-70-2, Poly(4-vinylphenol) 24979-82-6,
Poly(n-propyl acrylate) 24980-41-4, Polycaprolactone 24991-47-7,
Poly(4-chlorostyrene) 24991-55-7, Polyethylene glycol dimethyl ether
25014-12-4, Polymethacrylamide 25014-15-7, Poly(2-vinylpyridine)
25014-31-7 25034-86-0, Poly(styrene/methylmethacrylate) 25037-45-0,
Poly(bisphenol a carbonate) 25038-53-3 25038-54-4, Polycaprolactam,
uses 25038-87-3, Poly(methyl vinyl ketone) **25053-27-4**,
Poly(vinylsulfonic acid) sodium salt 25067-05-4, Poly(glycidyl
methacrylate) 25067-34-9, Ethylene-vinyl alcohol copolymer 25067-59-8,
Poly(n-vinylcarbazole) 25068-14-8, Polyacrolein 25068-26-2,
Poly(4-methyl-1-pentene) 25085-35-2, Ethyl acrylate/acrylic acid
copolymer 25085-53-4 25085-83-0, Poly(benzyl methacrylate)
25086-15-1, Methyl methacrylate-methacrylic acid copolymer 25086-42-4,
Poly(4-aminostyrene) 25086-89-9, n-Vinylpyrrolidone-vinyl acetate
copolymer 25087-26-7, Poly(methacrylic acid) 25103-87-1,
Poly(1,4-butanediol adipate) 25119-64-6, Poly(itaconic acid)
25119-83-9, Butyl acrylate/acrylic acid copolymer 25134-01-4,
Poly(2,6-dimethyl-1,4-phenylene oxide) 25154-86-3 25189-00-8,
Poly(tert-butyl methacrylate) 25189-55-3, Poly(n-isopropylacrylamide)
25189-84-8, Poly(acryloyl chloride) 25190-06-1, Poly(tetramethylene
ether glycol) 25212-86-6, Poly(furfuryl alcohol) 25213-34-7
25232-41-1, Poly(4-vinylpyridine) 25233-30-1, Polyaniline 25248-42-4,
Polycaprolactone 25249-16-5, Poly(2-hydroxyethyl methacrylate)

25266-02-8, Maleic anhydride-1-octadecene copolymer 25301-00-2, Poly(acrylic anhydride) 25322-69-4, Poly(propylene glycol) 25608-33-7, Methyl methacrylate-butyl methacrylate copolymer 25609-94-3, Poly(2-hydroxy-3-methacryloxypropyltrimethylammonium chloride) 25639-21-8, Poly(octadecyl methacrylate) 25655-35-0, Butadiene/maleic anhydride copolymer 25703-79-1, Poly(2-hydroxypropyl methacrylate) 25736-86-1, Poly(ethylene glycol) monomethacrylate 25805-17-8, Poly(2-ethyl-2-oxazoline) 25852-47-5, Poly(ethylene glycol) dimethacrylate 25852-49-7, Poly(propylene glycol) dimethacrylate 25988-32-3, Poly(methyl isopropenyl ketone) 25988-63-0 26009-03-0, Poly(glycolic acid) 26062-79-3, Poly(diallyl dimethylammonium chloride) 26099-09-2, Poly(maleic acid) 26100-51-6, Poly(dl-lactic acid) 26124-68-5, Poly(glycolic acid) 26142-30-3, Poly(propylene glycol) diglycidyl ether 26161-42-2 26246-92-4, Poly(lauryl acrylate) 26335-74-0, Poly(isobutyl acrylate) 26403-72-5, Poly(ethylene glycol) diglycidyl ether 26570-48-9, Poly(ethylene glycol) diacrylate 26655-84-5, 4-Methylstyrene/styrene copolymer 26655-94-7, Poly(isopropyl methacrylate) 26746-07-6, Poly(hexyl isocyanate) 26780-50-7 26915-72-0, Poly(ethylene glycol)monomethyl ether monomethacrylate 26937-45-1, Poly(methacryloyl chloride) 28474-30-8 28551-45-3, Poly(amyl methacrylate) 28805-15-4, Poly(methacrylic acid), ammonium salt 29435-48-1, Poly[(-)3-hydroxybutyric acid] 29471-77-0, Poly(2-vinyl-1-methylpyridinium bromide) 29500-86-5, Poly(decyl acrylate) 29690-74-2 29792-49-2, Poly(vinylamine) hydrochloride 30581-59-0 30604-81-0, Polypyrrole 30729-36-3, Poly(4-hydroxybenzoic acid) 31245-56-4 31693-08-0, 2-Hydroxyethyl methacrylate-methacrylic acid copolymer 31900-57-9D, Poly(dimethylsiloxane), methylsilyl-terminated 32131-17-2, Poly(hexamethyleneadipamide), uses 34801-99-5, Poly(vinyl ferrocene) 39420-45-6, Poly(propylene glycol) monomethacrylate 50851-57-5, Poly(styrenesulfonic acid) 54193-36-1, Poly(methacrylic acid), sodium salt 62962-69-0 67665-18-3 68912-04-9 71550-12-4, Poly(allylamine hydrochloride) 78274-32-5 82063-35-2 84928-92-7, Poly(3-methylthiophene) 86846-19-7, Acrylamidoxime-divinylbenzene copolymer 104934-51-2, Poly(3-octylthiophene) 104983-61-1 105729-79-1, Styrene-isoprene block copolymer 126969-21-9 156309-06-7, Dimethylsiloxane-ethylene oxide block copolymer 178402-40-9 184713-15-3 226984-81-2, Butyl acrylate-2-methacryloyloxyethyltrimethylammonium bromide copolymer 391201-84-6, Acrylamide-2-methacryloxyethyltrimethylammonium bromide copolymer 776304-98-4
RL: POF (Polymer in formulation); USES (Uses)
(reactive liquid polymer crosslinking agent)

IT 280-57-9D, Triethylenediamine, urethane derivative 25322-68-3, Polyethylene glycol 54735-63-6, Capa 301 90880-93-6, DV 571 133404-92-9, Morthane PS 62 151126-79-3, Capa 304 151820-34-7, Caspol 1962 250651-96-8, Rohamere 4944 545391-16-0, CA 9068 545391-18-2, DV 686
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(reactive liquid polymer crosslinking agent)

IT **25053-27-4**, Poly(vinylsulfonic acid) sodium salt
RL: POF (Polymer in formulation); USES (Uses)
(reactive liquid polymer crosslinking agent)

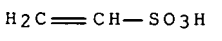
RN 25053-27-4 HCAPLUS
CN Ethenesulfonic acid, homopolymer, sodium salt (CA INDEX NAME)

CM 1

CRN 26101-52-0
CMF (C2 H4 O3 S)x
CCI PMS

CM 2

CRN 1184-84-5
CMF C2 H4 O3 S



L66 ANSWER 5 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2004:95701 HCAPLUS Full-text
DN 140:147277
TI Ion-conductive resin compositions and their cured products with excellent flexibility and self-supporting properties
IN Uno, Keiichi
PA Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2004035869	A	20040205	JP 2002-225355	20020628 <--
PRAI JP 2002-225355		20020628 <--		

AB The compns., useful for solid electrolyte films for Li batteries, fuel cells, and capacitors, contain monomers (A) bearing polymerizable functional groups and salt units consisting of C1-10 hydrocarbon- (un)substituted ammonium cations (selected from imidazolium, pyrazolium, benzimidazolium, pyridinium, indolium, carbazolium, quinolinium, piperidinium, piperazinium, C1-30-alkylammonium) and anions [selected from BF4, PF6, CnF2n+1O2, CnF2n+1SO3 (n = 1-4), (FSO2)2N(CF3SO2)2N, (CF2F5SO2)2N, (CF3SO2)3CCF3SO2NCOCF3, RSO3, RSO2NSO2CF3 (R = aliphatic or aromatic group)], monomers (B) bearing ≥2 polymerizable functional groups, solvent-soluble resins (C), and polymerization initiators (D) at the molar ratio of A/B 99.5/0.5-80/20 and the weight ratio of (A + B)/C 99/1-20/80. Thus, a composition containing 1-ethyl-3-allylimidazolium bis[(trifluoromethyl)sulfonyl]amide 30, diallyl phthalate 0.98, Kynar 2801 (vinylidene fluoride-hexafluoropropylene copolymer) 10, and benzoyl peroxide 1.5 g was cast on a glass plate and cured at 100° for 5 min and at 130° for 30 min to give a film with sufficient toughness and ion conductivity 3.9 + 10-3 S/cm.
IC ICM C08F002-44
ICS C08F291-00
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 52
ST ion cond solid electrolyte film toughness; allylimidazolium salt copolymer film flexibility capacitor; ammonium salt polymn film fuel cell
IT Isoprene-styrene rubber
RL: TEM (Technical or engineered material use); USES (Uses)
(hydrogenated, block, diblock, Kraton G 1701, organic solvent-soluble resin;
ion-conductive resin compns. for solid electrolyte films with good flexibility and self-supporting properties)
IT Ionic conductors
Solid electrolytes
(ion-conductive resin compns. for solid electrolyte films with good flexibility and self-supporting properties)
IT Polysulfones, uses
RL: TEM (Technical or engineered material use); USES (Uses)

(polyether-, organic solvent-soluble resin; ion-conductive resin compns. for
solid electrolyte films with good flexibility and self-supporting properties)

IT Polyethers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polysulfone-, organic solvent-soluble resin; ion-conductive resin compns. for solid electrolyte films with good flexibility and self-supporting properties)

IT 34311-88-1P 652134-09-3P 652134-14-0P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(for monomer preparation; ion-conductive resin compns. for solid electrolyte
films with good flexibility and self-supporting properties)

IT 51-17-2, Benzimidazole 74-96-4, Ethyl bromide **98-70-4**, 4-Styrenesulfonic acid 106-95-6, Allyl bromide, reactions 1072-63-5, 1-Vinylimidazole 1592-20-7, 4-Chloromethylstyrene 7098-07-9, 1-Ethylimidazole 90076-67-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(for monomer preparation; ion-conductive resin compns. for solid electrolyte
films with good flexibility and self-supporting properties)

IT 652134-12-8P 652134-13-9P 652134-15-1P **652134-17-3P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(ion-conductive resin compns. for solid electrolyte films with good flexibility and self-supporting properties)

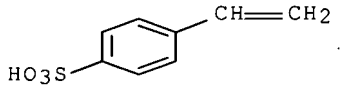
IT 105729-79-1 694523-05-2
RL: TEM (Technical or engineered material use); USES (Uses)
(isoprene-styrene rubber, hydrogenated, block, diblock, Kraton G 1701, organic solvent-soluble resin; ion-conductive resin compns. for solid electrolyte films with good flexibility and self-supporting properties)

IT 319476-28-3P 652129-54-9P 652134-11-7P **652134-16-2P**
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(monomer; ion-conductive resin compns. for solid electrolyte films with good flexibility and self-supporting properties)

IT 9011-17-0, Kynar 2801 25135-51-7, Udel P 3500
RL: TEM (Technical or engineered material use); USES (Uses)
(organic solvent-soluble resin; ion-conductive resin compns. for solid electrolyte films with good flexibility and self-supporting properties)

IT **98-70-4**, 4-Styrenesulfonic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(for monomer preparation; ion-conductive resin compns. for solid electrolyte
films with good flexibility and self-supporting properties)

RN 98-70-4 HCAPLUS
CN Benzenesulfonic acid, 4-ethenyl- (CA INDEX NAME)



IT **652134-17-3P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

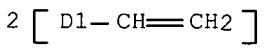
(ion-conductive resin compns. for solid electrolyte films with good flexibility and self-supporting properties)

RN 652134-17-3 HCAPLUS

CN Benzenesulfonic acid, 4-ethenyl-, compd. with 1H-benzimidazole (1:1), polymer with diethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 1321-74-0
CMF C10 H10
CCI IDS

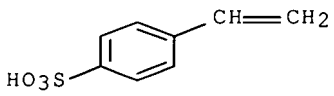


CM 2

CRN 652134-16-2
CMF C8 H8 O3 S . C7 H6 N2

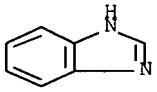
CM 3

CRN 98-70-4
CMF C8 H8 O3 S



CM 4

CRN 51-17-2
CMF C7 H6 N2



IT **652134-16-2P**

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

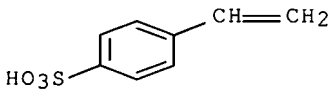
(monomer; ion-conductive resin compns. for solid electrolyte films with good flexibility and self-supporting properties)

RN 652134-16-2 HCAPLUS

CN Benzenesulfonic acid, 4-ethenyl-, compd. with 1H-benzimidazole (1:1) (9CI) (CA INDEX NAME)

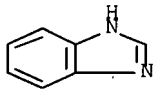
CM 1

CRN 98-70-4
CMF C8 H8 O3 S



CM 2

CRN 51-17-2
CMF C7 H6 N2



L66 ANSWER 6 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2004:78428 HCAPLUS Full-text
DN 140:96308
TI Hydrogen peroxide production using catalyst particles with controlled surface coordination number
IN Zhou, Bing; Rueter, Michael
PA Hydrocarbon Technologies Inc., USA
SO U.S. Pat. Appl. Publ., 17 pp., Cont.-in-part of U.S. Ser. No. 205,881, abandoned.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2004018143	A1	20040129	US 2003-357573	20030205 <--
PRAI US 2002-205881	B2	20020726 <--		

AB Hydrogen peroxide is produced from hydrogen and oxygen feeds by contacting them with a supported noble metal catalyst and a suitable organic liquid solvent having a Solvent Selection Parameter (SSP) between 0.14+10-4 and 5.0+10-4 at reaction condition of 30-80° and 500-2500 psig pressure. The catalyst consists of supported noble metal particles having an exposed crystal face atomic surface structure with atoms exhibiting a controlled coordination number of two. The nearest neighbors of each top-layer atom are two other top-layer atoms, also having a controlled coordination number of two (2). The organic solvent can be methanol, ethanol, n-propanol, isopropanol, acetone, acetonitrile, 1-propylamine, or their mixts. with water. The liquid mixture contains 1-500 ppm by weight NaBr promoter. The noble metals can be Pd, Pt, Ir, Au, Os, Ru, Rh, or Re. The solid support material is a carbon based material, such as carbon black; fluoridated carbon, or activated carbon. The

solid support material can contain other catalytic materials, such as Ti- or V-substituted silicalites; other substituted zeolites containing Ti, V, Te, B, Ge, or Nb; catalysts containing Si and Ti which are isomorphous with zeolite beta; titanium aluminophosphates; Cr and Fe incorporated silica aluminophosphates; Fe-substituted silicotungstates; zeolite encapsulated vanadium picolinate peroxo complexes; metal oxides including TiO2, MoO3, WO3 and substituted silica xerogels; molybdenum vanadium-phosphate compds.; and Cr-containing heteropolytungstates. The solid support material has a surface area between 50 and 500 m2/g. The supported noble metal catalyst is prepared by forming an organometallic complex of a noble metal salt and an ionic organic polymer or chelating compound as templating agent, depositing the organometallic complex on the surface of a solid catalyst support material, and reducing the deposited organometallic complex with H2 to form noble metal crystals. The ionic organic polymer or chelating compound can be cellulose succinate, polyacrylates, polyvinylbenzoates, polyvinyl sulfate, polyvinyl sulfonates, sulfonated styrene, polybisphenol carbonates, **polybenzimidazoles**, polypyridine, sulfonated polyethylene terephthalate, polyvinyl alc. acetate and succinate, polyethylene glycol, polypropylene glycol, ethylene and propylenediamine, cyclic diamines, such as piperidine, EDTA, pyromellitic acid, salicylic acid, hydroxymalonic acid, and urea.

IC ICM C01B015-029
INCL 423584000; 502325000
CC 49-8 (Industrial Inorganic Chemicals)
Section cross-reference(s): 67
ST hydrogen peroxide manuf noble metal catalyst
IT Silicalites (zeolites)
RL: CAT (Catalyst use); USES (Uses)
(V-substituted; hydrogen peroxide production using catalyst particles with controlled surface coordination number)
IT Carbon black, uses
RL: CAT (Catalyst use); USES (Uses)
(catalyst support; hydrogen peroxide production using catalyst particles with controlled surface coordination number)
IT Xerogels
(hydrogen peroxide production using catalyst particles with controlled surface coordination number)
IT Beta zeolites
Noble metals
Titanium silicalite
RL: CAT (Catalyst use); USES (Uses)
(hydrogen peroxide production using catalyst particles with controlled surface coordination number)
IT Acrylic polymers, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrogen peroxide production using catalyst particles with controlled surface coordination number)
IT **Polybenzimidazoles**
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrogen peroxide production using catalyst particles with controlled surface coordination number)
IT Polyoxyalkylenes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrogen peroxide production using catalyst particles with controlled surface coordination number)
IT Polyesters, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(sulfonated; hydrogen peroxide production using catalyst particles with controlled surface coordination number)
IT Heteropoly acids
RL: CAT (Catalyst use); USES (Uses)

(tungstates, Cr-containing; hydrogen peroxide production using catalyst particles with controlled surface coordination number)

IT 11121-26-9, Silicotungstate
RL: CAT (Catalyst use); USES (Uses)
(Fe-substituted; hydrogen peroxide production using catalyst particles with controlled surface coordination number)

IT 7440-44-0, Carbon, uses
RL: CAT (Catalyst use); USES (Uses)
(activated or fluoridated, catalyst support; hydrogen peroxide production using catalyst particles with controlled surface coordination number)

IT 1313-27-5, Molybdenum oxide (MoO3), uses 1314-35-8, Tungsten oxide (WO3), uses 7439-88-5, Iridium, uses 7440-04-2, Osmium, uses 7440-05-3, Palladium, uses 7440-06-4, **Platinum**, uses 7440-15-5, Rhenium, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-57-5, Gold, uses 13463-67-7, Titanium oxide (TiO2), uses 80927-59-9, Titanium aluminophosphate
RL: CAT (Catalyst use); USES (Uses)
(hydrogen peroxide production using catalyst particles with controlled surface coordination number)

IT 7722-84-1P, Hydrogen peroxide, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(hydrogen peroxide production using catalyst particles with controlled surface coordination number)

IT 57-13-6, Urea, reactions 60-00-4, EDTA, reactions 69-72-7, Salicylic acid, reactions 78-90-0, Propylenediamine 80-69-3, Hydroxymalonic acid 89-05-4, Pyromellitic acid 100-42-5D, Styrene, sulfonated 107-15-3, Ethylenediamine, reactions 110-89-4, Piperidine, reactions 1333-74-0, Hydrogen, reactions 7782-44-7, Oxygen, reactions 9003-04-7, Sodium polyacrylate 24991-32-0D, Polyvinylbenzoate, derivs. 25013-01-8, Polypyridine 25037-45-0D, Carbonic acid, polymer with 4,4'-(1-methylethylidene)bis[phenol], salts 25038-59-9D, Polyethylene terephthalate, sulfonated 25191-25-7, Polyvinyl sulfate 25322-68-3, Polyethylene glycol 25322-69-4, Polypropylene glycol **26101-52-0D**, Polyvinyl sulfonic acid, salts 53125-04-5, Polyvinyl alcohol succinate 57126-19-9, Cellulose succinate 122303-55-3, Polyvinyl alcohol acetate
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrogen peroxide production using catalyst particles with controlled surface coordination number)

IT 7647-15-6, Sodium bromide (NaBr), uses
RL: NUU (Other use, unclassified); USES (Uses)
(promoter; hydrogen peroxide production using catalyst particles with controlled surface coordination number)

IT 64-17-5, Ethanol, uses 67-56-1, Methanol, uses 67-63-0, Isopropanol, uses 67-64-1, Acetone, uses 71-23-8, n-Propanol, uses 75-05-8, Acetonitrile, uses 107-10-8, 1-Propylamine, uses 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; hydrogen peroxide production using catalyst particles with controlled surface coordination number)

IT **26101-52-0D**, Polyvinyl sulfonic acid, salts
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrogen peroxide production using catalyst particles with controlled surface coordination number)

RN 26101-52-0 HCAPLUS
CN Ethenesulfonic acid, homopolymer (CA INDEX NAME)

CM 1

CRN 1184-84-5
CMF C2 H4 O3 S

$H_2C{=}CH{-}SO_3H$

L66 ANSWER 7 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2003:913467 HCAPLUS Full-text
DN 139:384023
TI Method of preparation of polymer electrolyte **membrane** for fuel cells
IN Kiefer, Joachim; Uensal, Oemer
PA Celanese Ventures GmbH, Germany
SO PCT Int. Appl., 48 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

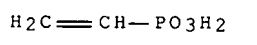
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003096465	A1	20031120	WO 2003-EP4914	20030512 <--
	W: BR, CA, CN, JP, KR, MX, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	DE 10220818	A1	20031120	DE 2002-10220818	20020510 <--
	CA 2485564	A1	20031120	CA 2003-2485564	20030512 <--
	EP 1506591	A1	20050216	EP 2003-727465	20030512 <--
	EP 1506591	B1	20061129		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
	CN 1653640	A	20050810	CN 2003-810598	20030512 <--
	JP 2005525683	T	20050825	JP 2004-504331	20030512 <--
	AT 347180	T	20061215	AT 2003-727465	20030512 <--
	US 2006166067	A1	20060727	US 2004-513895	20041208 <--
PRAI	DE 2002-10220818	A	20020510	<--	
	WO 2003-EP4914	W	20030512		

AB The invention relates to a proton-conducting polymer electrolyte **membrane** which is based on polyvinylphosphonic acid/polyvinylsulfonic acid polymers and can be used for a variety of purposes due to the excellent chemical and thermal properties thereof. The inventive **membrane** is particularly suitable as a polymer electrolyte **membrane** in PEM fuel cells.
IC ICM H01M008-10
ICS C08J005-22; B01D071-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST polymer electrolyte **membrane** fuel cell
IT Fuel cell electrolytes
(method of preparation of polymer electrolyte **membrane** for fuel cells)
IT Fuel cells
(solid electrolyte; method of preparation of polymer electrolyte **membrane** for fuel cells)
IT **110161-68-7DP**, Vinylphosphonic acid-vinylsulfonic acid copolymer, derivs.
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(method of preparation of polymer electrolyte **membrane** for fuel cells)
IT **110161-68-7DP**, Vinylphosphonic acid-vinylsulfonic acid copolymer,

derivs.
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(method of preparation of polymer electrolyte **membrane** for fuel cells)
RN 110161-68-7 HCAPLUS
CN Ethenesulfonic acid, polymer with ethenylphosphonic acid (9CI) (CA INDEX NAME)

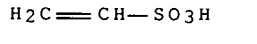
CM 1

CRN 1746-03-8
CMF C2 H5 O3 P



CM 2

CRN 1184-84-5
CMF C2 H4 O3 S



RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 8 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2003:912824 HCAPLUS Full-text
DN 140:9216
TI Regeneration of spent supported metal catalysts
IN Zhou, Bing; Rueter, Michael
PA Headwaters Nanokinetix, Inc., USA
SO U.S. Pat. Appl. Publ., 8 pp., Cont.-in-part of U.S. Ser. No. 745,510.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003216245	A1	20031120	US 2002-326042	20021220 <--
	US 6908873	B2	20050621		
	US 2002115554	A1	20020822	US 2000-745510	20001222 <--
	US 6740615	B2	20040525		
	CA 2508612	A1	20040722	CA 2003-2508612	20030325 <--
	WO 2004060553	A1	20040722	WO 2003-US9216	20030325 <--
	W: AT, CA, CN, IN, JP, MX				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	EP 1587615	A1	20051026	EP 2003-714398	20030325 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
	JP 2006511334	T	20060406	JP 2004-564635	20030325 <--
PRAI	US 2000-745510	A2	20001222 <--		

US 2002-326042 A 20021220 <--
WO 2003-US9216 W 20030325

AB A method for regenerating spent supported metal catalysts comprising treating the spent catalyst with an organo-metallic complex forming agent having an ionization constant pK 1 of at least 2.5. The catalyst activity is restored to an activity level near to or greater than the fresh catalyst. The regeneration method is particularly useful for regenerating spent palladium catalysts on an alumina support as utilized for the hydrogenation of Et anthraquinone (EAQ) in the production of hydrogen peroxide.

IC ICM B01J038-50
INCL 502022000; 502029000
CC 67-4 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 49, 78
ST regeneration spent supported metal catalyst; palladium alumina catalyst regeneration hydrogenation ethyl anthraquinone; hydrogen peroxide prodn palladium alumina catalyst regeneration
IT Amines, processes
Amino acids, processes
Mannich bases
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(aliphatic and aromatic; regeneration of spent supported metal catalysts)
IT **Polybenzimidazoles**
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(chelating agent; regeneration of spent supported metal catalysts)
IT Carboxylic acids, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(monobasic, dibasic, aliphatic or aromatic, chelating agent; regeneration of
spent supported metal catalysts)
IT Polycarbonates, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(polybiphenol, chelating agent; regeneration of spent supported metal catalysts)
IT Catalysts
Chelating agents
Complexing agents
(regeneration of spent supported metal catalysts)
IT Alkali metals, uses
Alkaline earth metals
Alloys, uses
Bentonite, uses
Carbon black, uses
Clays, uses
Diatomite
Group IIIA elements
Group VA elements
Main group elements
Metals, uses
Noble metals
Nonmetals
Polymers, uses
Semimetals
Transition metals, uses
Zeolites (synthetic), uses
RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)

(regeneration of spent supported metal catalysts)
IT Organometallic compounds
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(regeneration of spent supported metal catalysts)
IT Carboxylic acids, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(tricarboxylic acids, aliphatic or aromatic, chelating agent; regeneration of
spent supported metal catalysts)
IT 7440-44-0, Activated carbon, uses
RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(activated and fluoridated; regeneration of spent supported metal catalysts)
IT 56-40-6, Glycine, processes 56-40-6D, Glycine, salts 67-43-6, Diethylenetriamine pentaacetic acid 67-43-6D, Diethylenetriamine pentaacetic acid, salts 69-72-7, Salicylic acid, processes 69-72-7D, Salicylic acid, salts 77-92-9, Citric acid, processes 77-92-9D, Citric acid, salts 78-90-0, Propylenediamine 78-90-0D, Propylenediamine, salts 79-14-1, Glycolic acid, processes 79-14-1D, Glycolic acid, salts 87-69-4, Tartaric acid, processes 87-69-4D, Tartaric acid, salts 107-15-3, Ethylenediamine, processes 107-15-3D, Ethylenediamine, salts 110-15-6, Succinic acid, processes 110-15-6D, Succinic acid, salts 110-94-1, Glutaric acid 110-94-1D, Glutaric acid, salts 111-40-0, Diethylenetriamine 111-40-0D, Diethylenetriamine, salts 112-24-3 112-24-3D, salts 118-92-3, 2-Aminobenzoic acid 118-92-3D, 2-Aminobenzoic acid, salts 121-91-5, Isophthalic acid, processes 121-91-5D, Isophthalic acid, salts 141-82-2, Malonic acid, processes 141-82-2D, Malonic acid, salts 150-39-0, N-(Hydroxyethyl)ethylenediamine triacetic acid 150-39-0D, N-(Hydroxyethyl)ethylenediaminetriacetic acid, salts 6419-19-8, Amino tri(methylenephosphonic acid) 9003-01-4D, Polyacrylic acid, derivs. 9003-39-8, Polyvinylpyrrolidone 15477-76-6, Phosphonate 15827-60-8 15827-60-8D, salts 24991-32-0, Polyvinylbenzoate 25013-01-8, Polypyridine 25087-26-7D, Polymethacrylic acid, derivs. 25191-25-7, Polyvinylsulfate **26101-52-0**
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(chelating agent; regeneration of spent supported metal catalysts)
IT 50674-60-7, Ethyl anthraquinone
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrogenation of; regeneration of spent supported metal catalysts)
IT 1309-48-4, Magnesia, uses 1314-23-4, Zirconia, uses 1344-28-1, Alumina, uses 7429-90-5, Aluminum, uses 7439-88-5, Iridium, uses 7439-89-6, Iron, uses 7439-91-0, Lanthanum, uses 7439-92-1, Lead, uses 7439-93-2, Lithium, uses 7439-95-4, Magnesium, uses 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-04-2, Osmium, uses 7440-05-3, Palladium, uses 7440-06-4, **Platinum**, uses 7440-09-7, Potassium, uses 7440-15-5, Rhenium, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-20-2, Scandium, uses 7440-21-3, Silicon, uses 7440-22-4, Silver, uses 7440-23-5, Sodium, uses 7440-31-5, Tin, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-36-0, Antimony, uses 7440-38-2, Arsenic, uses 7440-41-7, Beryllium, uses 7440-42-8, Boron, uses 7440-45-1, Cerium, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-55-3, Gallium, uses 7440-56-4, Germanium, uses 7440-57-5, Gold, uses 7440-62-2, Vanadium, uses 7440-66-6, Zinc, uses 7440-69-9, Bismuth, uses 7440-70-2, Calcium,

uses 7440-74-6, Indium, uses 7553-56-2, Iodine, uses 7631-86-9, Silica, uses 7704-34-9, Sulfur, uses 7723-14-0, Phosphorus, uses 7726-95-6, Bromine, uses 7727-37-9, Nitrogen, uses 7782-41-4, Fluorine, uses 7782-42-5, Graphite, uses 7782-44-7, Oxygen, uses 7782-49-2, Selenium, uses 7782-50-5, Chlorine, uses 13463-67-7, Titania, uses 13494-80-9, Tellurium, uses
RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(regeneration of spent supported metal catalysts)

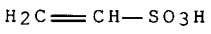
IT 7722-84-1P, Hydrogen peroxide, preparation
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(regeneration of spent supported metal catalysts)

IT **26101-52-0**
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(chelating agent; regeneration of spent supported metal catalysts)

RN 26101-52-0 HCAPLUS
CN Ethenesulfonic acid, homopolymer (CA INDEX NAME)

CM 1

CRN 1184-84-5
CMF C2 H4 O3 S



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 9 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2003:719543 HCAPLUS Full-text
DN 139:248013
TI Manufacture of proton-conducting fuel cell electrolyte **membrane** having reduced methanol permeability
IN Kiefer, Joachim; Uensal, Oemer; Calundann, Gordon; Crivello, James
PA Celanese Ventures GmbH, Germany
SO PCT Int. Appl., 58 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003074597	A1	20030912	WO 2003-EP2397	20030304 <--
	W: BR, CA, CN, JP, KR, MX, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	DE 10209685	A1	20030918	DE 2002-10209685	20020306 <--
	DE 10210499	A1	20030925	DE 2002-10210499	20020311 <--
	CA 2478530	A1	20030912	CA 2003-2478530	20030304 <--
	EP 1483316	A1	20041208	EP 2003-743390	20030304 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
	US 2005118477	A1	20050602	US 2003-506387	20030304 <--
	JP 2005519428	T	20050630	JP 2003-573059	20030304 <--
	CN 1639239	A	20050713	CN 2003-805300	20030304 <--

PRAI DE 2002-10209685 A 20020306 <--
DE 2002-10210499 A 20020311 <--
WO 2003-EP2397 W 20030304

AB A title **membrane** was manufactured by (A) swelling a polymer film with a liquid comprising **vinylsulfonic** acid and (B) polymerization of the **vinylsulfonic** acid present in the liquid used in step (A). For example, heating aqueous solution containing **vinylsulfonic** acid (obtained by acidification of Na vinylsulfonate with acidic ion exchanger) and **vinylphosphonic** acid for 1 h at 70°, adding CN-120 (epoxy acrylate) and Irgacure 184, heating the solution for 30 min at 70°, immersing a **polybenzimidazole** film in the mixture and heating for 3 h at 80°, placing the resulting film between transparent polypropylene (PP) films, irradiating both sides of the laminate and separating PP films gave a title **membrane**. The typical weight gain of the **membrane** was 350%.

IC ICM C08J007-16
ICS H01M008-10; C08J005-22

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 35, 38

ST **polyvinylsulfonic** acid **polybenzimidazole** film proton conducting electrolyte **membrane** manuf; **polybenzimidazole** film **vinylsulfonic vinylphosphonic** acid polymn fuel cell **membrane**; proton conducting **membrane** manuf **vinylsulfonic** acid epoxy acrylate polymer

IT **Polybenzimidazoles**
RL: TEM (Technical or engineered material use); USES (Uses)
(films; manufacture of **vinylsulfonic** acid copolymer proton-conducting fuel cell electrolyte **membrane**)

IT Fuel cell electrolytes
Fuel cell separators
(manufacture of **vinylsulfonic** acid copolymer proton-conducting fuel cell electrolyte **membrane**)

IT **596130-67-5P**, CN 120-**Vinylphosphonic** acid-**Vinylsulfonic** acid copolymer 596130-68-6P, CN 120-Styrenesulfonic acid-**Vinylphosphonic** acid copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**membrane**; manufacture of **vinylsulfonic** acid copolymer proton-conducting fuel cell electrolyte **membrane**)

IT **596130-67-5P**, CN 120-**Vinylphosphonic** acid-**Vinylsulfonic** acid copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**membrane**; manufacture of **vinylsulfonic** acid copolymer proton-conducting fuel cell electrolyte **membrane**)

RN 596130-67-5 HCAPLUS

CN Phosphonic acid, ethenyl-, polymer with CN 120 and ethenesulfonic acid (9CI) (CA INDEX NAME)

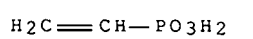
CM 1

CRN 163206-65-3
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

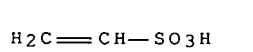
CM 2

CRN 1746-03-8
CMF C2 H5 O3 P



CM 3

CRN 1184-84-5
CMF C2 H4 O3 S



RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 10 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2003:719541 HCAPLUS Full-text
DN 139:231745
TI Manufacture of proton-conducting polymer **membranes** for fuel cells from mixtures of polymers with **vinylsulfonic** acid monomers
IN Kiefer, Joachim; Uensal, Oemer
PA Celanese Ventures GmbH, Germany
SO PCT Int. Appl., 57 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003074595	A1	20030912	WO 2003-EP2395	20030304 <--
	W: BR, CA, CN, JP, KR, MX, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	DE 10209684	A1	20030925	DE 2002-10209684	20020306 <--
	DE 10210500	A1	20031009	DE 2002-10210500	20020311 <--
	CA 2477863	A1	20030912	CA 2003-2477863	20030304 <--
	EP 1485427	A1	20041215	EP 2003-711948	20030304 <--
	EP 1485427	B1	20060118		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
	US 2005118478	A1	20050602	US 2003-506622	20030304 <--
	CN 1649945	A	20050803	CN 2003-810165	20030304 <--
	JP 2005526875	T	20050908	JP 2003-573057	20030304 <--
	AT 316111	T	20060215	AT 2003-711948	20030304 <--
PRAI	DE 2002-10209684	A	20020306 <--		
	DE 2002-10210500	A	20020311 <--		
	WO 2003-EP2395	W	20030304		

AB A proton-conducting polymer **membrane** based on poly(**vinylsulfonic** acid), useful especially as a polymer-electrolyte- **membrane** (PEM) in PEM-fuel cells, is manufactured by (A) mixing a polymer with **vinylsulfonic** acid monomer, (B) forming a planar structure by using the mixture from step (A) on a support, and (C) polymerizing the **vinylsulfonic** acid monomer in the planar structure prepared in step (B). A title **membrane** was prepared by treating **polybenzimidazole** (PBI) with H3PO4 for 4 h at 160°, neutralizing and washing the PBI with H2O, drying, dissolving the PBI in **vinylphosphonic** acid, adding aqueous **vinylsulfonic** acid solution (preparation from Na vinylsulfonate

given), casting a film on a PET polyester substrate and irradiating with electron beam.

IC ICM C08J005-22
ICS B01D007-00; H01M008-02

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 35, 76

ST **polybenzimidazole vinylsulfonic vinylphosphonic** acid copolymn proton conducting **membrane** manuf; interpenetrating network **polybenzimidazole vinylsulfonic vinylphosphonic** acid copolymer electrolyte **membrane**; fuel cell **membrane polybenzimidazole vinylsulfonic vinylphosphonic** acid copolymer manuf; electron beam polymn **vinylsulfonic vinylphosphonic** acid fuel cell **membrane**

IT **Membranes**, nonbiological
(conductive; manufacture of proton-conducting polymer **membranes** for fuel cells from mixts. of polymers with **vinylsulfonic** acid monomers)

IT **Membranes**, nonbiological
(elec. conductive; manufacture of proton-conducting polymer **membranes** for fuel cells from mixts. of polymers with **vinylsulfonic** acid monomers)

IT Fuel cell separators
Fuel cells
(manufacture of proton-conducting polymer **membranes** for fuel cells from mixts. of polymers with **vinylsulfonic** acid monomers)

IT **Polybenzimidazoles**
RL: TEM (Technical or engineered material use); USES (Uses)
(**membranes**; manufacture of proton-conducting polymer **membranes** for fuel cells from mixts. of polymers with **vinylsulfonic** acid monomers)

IT **110161-68-7P, Vinylphosphonic** acid-**Vinylsulfonic** acid copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(interpenetrating network with **polybenzimidazole, membrane**; manufacture of proton-conducting polymer **membranes** for fuel cells from mixts. of polymers with **vinylsulfonic** acid monomers)

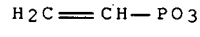
IT **110161-68-7P, Vinylphosphonic** acid-**Vinylsulfonic** acid copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(interpenetrating network with **polybenzimidazole, membrane**; manufacture of proton-conducting polymer **membranes** for fuel cells from mixts. of polymers with **vinylsulfonic** acid monomers)

RN 110161-68-7 HCAPLUS

CN Ethenesulfonic acid, polymer with ethenylphosphonic acid (9CI) (CA INDEX NAME)

CM 1

CRN 1746-03-8
CMF C2 H5 O3 P



CM 2

CRN 1184-84-5
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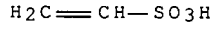


RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 11 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2003:550635 HCAPLUS Full-text
DN 139:119902
TI Polymer electrolyte fuel cells employing conducting redox polymers as electrode catalysts
IN Abe, Masao; Ishibashi, Kuniaki
PA Nitto Denko Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003203641	A	20030718	JP 2001-401949	20011228 <--
PRAI JP 2001-401949		20011228 <--		

AB The fuel cell employs a conducting redox polymer as an electrode catalyst, and a proton-exchange electrolyte membrane made of a hydrocarbon polymer having (hetero atom-containing framework and) acid groups. The fuel cell shows high electromotive force and high discharge d., and can be economically manufactured by employing the hydrocarbyl polymer electrolytes.
IC ICM H01M004-90
ICS H01M004-92; H01M008-10
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 67, 76
ST fuel cell electrode redox catalyst conducting polymer; doped conducting polymer redox catalyst fuel cell electrode; sulfonated polymer fuel cell proton exchange electrolyte; polyaniline conductive polymer fuel cell electrode catalyst; polypyridine conductive polymer fuel cell electrode catalyst; polyindole conductive polymer fuel cell electrode catalyst; Polyphenylquinoxaline conductive polymer fuel cell electrode catalyst
IT Fuel cell electrodes
(conducting polymer redox catalysts in; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)
IT Redox reaction catalysts
(conducting polymers; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)
IT Phenolic resins, uses
RL: CAT (Catalyst use); DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(novolak, phenolsulfonic acid-based, dopant, in conducting redox polymers; polymer electrolyte fuel cells containing conducting redox

polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)

IT Doping
(of conducting redox polymer; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)

IT Fuel cell electrolytes
(polymer; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)

IT Polyquinoxalines
RL: CAT (Catalyst use); DEV (Device component use); USES (Uses)
(polyphenylquinoxalines, redox catalysts in electrodes; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)

IT Polyanilines
RL: CAT (Catalyst use); DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(polyvinylsulfonic acid-doped, redox catalysts in electrodes; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)

IT Conducting polymers
(redox catalysts, in electrodes; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)

IT Fuel cells
(solid electrolyte, polymer electrolyte; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)

IT **Polybenzimidazoles**
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(sulfonated, proton-exchange electrolytes; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)

IT **26101-52-0**, Polyvinylsulfonic acid 50973-35-8, Formaldehyde-phenolsulfonic acid copolymer
RL: CAT (Catalyst use); DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(dopant, in polyaniline redox catalysts in electrodes; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)

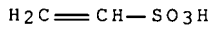
IT 7664-93-9, Sulfuric acid, uses
RL: CAT (Catalyst use); DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(dopant, in polyindole redox catalysts in electrodes; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)

IT 82451-55-6P, Polyindole
RL: CAT (Catalyst use); DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(doped, redox catalysts in electrodes; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid

groups)
IT 25233-30-1P, Polyaniline
RL: CAT (Catalyst use); DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(polyvinylsulfonic acid-doped, redox catalysts in electrodes; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)
IT 9003-31-0DP, Polyisoprene, sulfonated 9003-70-7DP, Divinylbenzene-styrene copolymer, sulfonated 76067-46-4P
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(proton-exchange electrolytes; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)
IT 25013-01-8, Polypyridine
RL: CAT (Catalyst use); DEV (Device component use); USES (Uses)
(redox catalysts in electrodes; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)
IT **26101-52-0**, Polyvinylsulfonic acid
RL: CAT (Catalyst use); DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(dopant, in polyaniline redox catalysts in electrodes; polymer electrolyte fuel cells containing conducting redox polymer as electrode catalyst and proton-exchange electrolyte made of hydrocarbyl polymer having acid groups)
RN 26101-52-0 HCAPLUS
CN Ethenesulfonic acid, homopolymer (CA INDEX NAME)

CM 1

CRN 1184-84-5
CMF C2 H4 O3 S



L66 ANSWER 12 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2002:449554 HCAPLUS Full-text
DN 137:30198
TI Apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same
IN Thomas, Michel
PA Haspol Industrie, Fr.
SO PCT Int. Appl., 37 pp.
CODEN: PIXXD2
DT Patent
LA French
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002045830	A1	20020613	WO 2001-IB2297	20011203 <--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT,

RO, RU, SD
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

FR 2817769	A1	20020614	FR 2000-16007	20001208 <--
FR 2817769	B1	20030912		
AU 2002020954	A5	20020618	AU 2002-20954	20011203 <--
AU 781447	B2	20050526		
EP 1339481	A1	20030903	EP 2001-999421	20011203 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004515282	T	20040527	JP 2002-547603	20011203 <--
US 2003102262	A1	20030605	US 2002-203106	20020806 <--
US 7077961	B2	20060718		
PRAI FR 2000-16007	A	20001208 <--		
WO 2001-IB2297	W	20011203 <--		

AB The invention concerns an apparatus for extracorporeal blood or plasma treatment comprising two compartments, one compartment for circulating blood or plasma, and one compartment for circulating used liquid, separated by a wet semipermeable **membrane**. The invention is characterized in that the apparatus has, before and after sterilization, the following tech. features: the **membrane** is impregnated with a aqueous glycerol solution; the aqueous glycerol solution contains 7 to 15 weight % of glycerol and is free of toxic chemical compds.; the two compartments are flushed of the aqueous glycerol solution The invention also concerns methods for making said apparatus Diagrams describing the apparatus assembly and operation are given.

IC ICM B01D065-02
ICS A61L002-08; A61M001-16

CC 9-1 (Biochemical Methods)
Section cross-reference(s): 13

ST app sterilization glycerol dialysis **membrane** blood plasma polymer

IT Alcohols, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(aliphatic, monohydrates; apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)

IT Apparatus
Blood
Blood analysis
Blood plasma
Carboxyl group
Circulation
Gamma ray sterilization
Liquids
Molecular weight
Permeability
Phosphate group
Sample preparation
Sterilization and Disinfection
Temperature
(apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)

IT Polysulfones, uses
RL: DEV (Device component use); USES (Uses)
(apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)

IT Toxins
RL: REM (Removal or disposal); PROC (Process)

(apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)

IT Polymerization
(co-; apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)

IT Dialyzers
(**membranes**, NEPHRAL 300; apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)

IT Functional groups
(phosphonate group; apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)

IT Sulfonic acids, properties
RL: PRP (Properties)
(salts; apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)

IT **Membranes**, nonbiological
(semipermeable; apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)

IT Functional groups
(sulfate; apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)

IT Alkenes, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(unsatd., copolymers with acrylonitrile; apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)

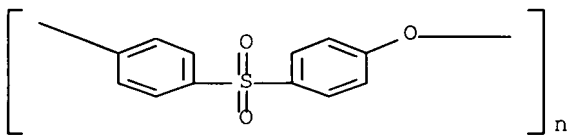
IT 56-81-5D, Glycerol, derivs.
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)

IT 107-13-1D, Acrylonitrile, copolymers 9011-14-7, Polymethylmethacrylate 25014-41-9, Polyacrylonitrile **25667-42-9**, Polyethersulfone
RL: DEV (Device component use); USES (Uses)
(apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)

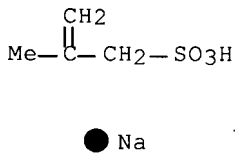
IT **1561-92-8**, Sodium methallylsulfonate 25014-41-9D, Polyacrylonitrile, anionic olefinic derivs.
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)

IT **25667-42-9**, Polyethersulfone
RL: DEV (Device component use); USES (Uses)
(apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)

RN 25667-42-9 HCAPLUS
CN Poly(oxy-1,4-phenylenesulfonyl-1,4-phenylene) (CA INDEX NAME)



IT **1561-92-8**, Sodium methallylsulfonate
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(apparatus for extracorporeal blood or plasma treatment comprising a wet semipermeable **membrane** and methods for making same)
RN 1561-92-8 HCAPLUS
CN 2-Propene-1-sulfonic acid, 2-methyl-, sodium salt (1:1) (CA INDEX NAME)



RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 13 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2002:107211 HCAPLUS Full-text
DN 136:136035
TI Modified hollow-fiber **membranes**
IN Nakabayashi, Nobuo; Ishihara, Kazuhiko; Miyazaki, Shinji; Imamura, Kazuo; Suzuki, Ken; Kamenosono, Koji
PA Asahi Medical Co., Ltd., Japan; NOF Corporation
SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

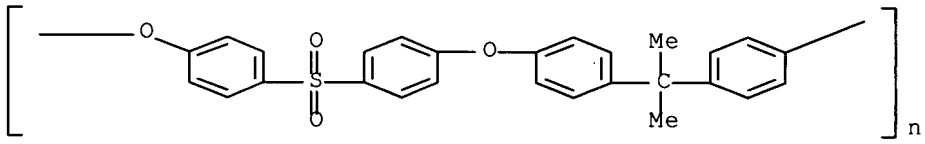
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002009857	A1	20020207	WO 2001-JP6487	20010727 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 200176692	A	20020213	AU 2001-76692	20010727 <--
EP 1306121	A1	20030502	EP 2001-954364	20010727 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2004045897	A1	20040311	US 2003-343014	20030602 <--
US 7108787	B2	20060919		
PRAI JP 2000-227448	A	20000727 <--		
WO 2001-JP6487	W	20010727 <--		

AB The **membrane** has improved surface hydrophilicity without increasing the amount of components released therefrom, is less apt to interact with living-body components, does not adsorb proteins, and is less apt to deteriorate in performance. The **membrane** has a copolymer of 2-methacryloyloxyethylphosphorylcholine and other polymerizable vinyl monomer held on a surface of the **membrane**, the copolymer being present on the surface in a higher concentration than in other parts of the **membrane**. The **membrane** is useful in medical applications such as hemodialysis and blood filtration and in the medical industry, food industry, etc.

IC ICM B01D071-40
CC 38-3 (**Plastics** Fabrication and Uses)
Section cross-reference(s): 17, 40, 63
ST methacryloyloxyethylphosphorylcholine copolymer modification hollow fiber **membrane**; hemodialysis hollow fiber **membrane**; blood filtration hollow fiber **membrane**
IT Acrylic fibers, uses
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(acrylic acid-acrylonitrile-methallylsulfonic acid-Me acrylate; modified hollow-fiber **membranes** with improved surface hydrophilicity for medical applications)
IT **Membrane** filters
(blood; modified hollow-fiber **membranes** with improved surface hydrophilicity for medical applications)
IT Polyolefin fibers
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(ethylene; modified hollow-fiber **membranes** with improved surface hydrophilicity for medical applications)
IT Polysulfones, uses
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(fiber; modified hollow-fiber **membranes** with improved surface hydrophilicity for medical applications)
IT Blood
(filtration **membranes**; modified hollow-fiber **membranes** with improved surface hydrophilicity for medical applications)
IT Dialyzers
(hemodialyzers, **membranes**; modified hollow-fiber **membranes** with improved surface hydrophilicity for medical applications)
IT **Membranes**, nonbiological
(hollow-fiber; modified hollow-fiber **membranes** with improved surface hydrophilicity for medical applications)
IT Ultrafilters
(modified hollow-fiber **membranes** with improved surface hydrophilicity for medical applications)
IT Synthetic polymeric fibers, uses
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(polysulfones; modified hollow-fiber **membranes** with improved surface hydrophilicity for medical applications)
IT 9002-88-4, HDPE **25135-51-7**, Ultrason S 3010 **88288-98-6**, Acrylic acid-acrylonitrile-methyl acrylate-methallylsulfonic acid copolymer
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(fibers; modified hollow-fiber **membranes** with improved surface hydrophilicity for medical applications)
IT 125275-25-4, Butyl methacrylate-2-methacryloyloxyethylphosphorylcholine copolymer 313216-64-7 393587-07-0, 2-Methacryloyloxyethyl phenylcarbamate-2-methacryloyloxyethylphosphorylcholine copolymer
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(modified hollow-fiber **membranes** with improved surface hydrophilicity for medical applications)
IT **25135-51-7**, Ultrason S 3010 **88288-98-6**, Acrylic acid-acrylonitrile-methyl acrylate-methallylsulfonic acid copolymer

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(fibers; modified hollow-fiber **membranes** with improved surface hydrophilicity for medical applications)

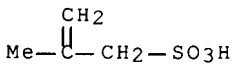
RN 25135-51-7 HCAPLUS
CN Poly[oxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (CA INDEX NAME)



RN 88288-98-6 HCAPLUS
CN 2-Propenoic acid, polymer with 2-methyl-2-propene-1-sulfonic acid, methyl 2-propenoate and 2-propenenitrile (9CI) (CA INDEX NAME)

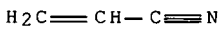
CM 1

CRN 3934-16-5
CMF C4 H8 O3 S



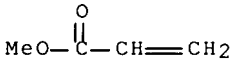
CM 2

CRN 107-13-1
CMF C3 H3 N



CM 3

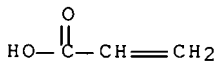
CRN 96-33-3
CMF C4 H6 O2



CM 4

CRN 79-10-7

CMF C3 H4 O2



RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 14 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2001:713743 HCAPLUS Full-text
DN 135:259849
TI Method of fabrication of **membrane**/electrode composite for fuel cell
IN Charnock, Peter; Wilson, Brian
PA Victrex Manufacturing Limited, UK
SO PCT Int. Appl., 51 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001071835	A2	20010927	WO 2001-GB1244	20010321 <--
WO 2001071835	A3	20020214		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

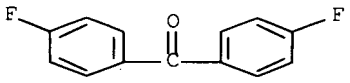
PRAI GB 2000-6878	A	20000322 <--	
GB 2000-31211	A	20001221 <--	

AB A method of manufacturing a **membrane**/electrode composite of a type which includes a catalyst material on a first material which comprises a first conductive polymer includes a step of contacting the first material comprising the first conductive polymer with a polar protic solvent (e.g. sulfuric acid, a sulfonic acid, hydrofluoric acid or phosphoric acid) and causing catalyst material to deposit on the first material. The composite may be used in an electrochem. device, for example a fuel cell.
IC ICM H01M008-02
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): **38**
ST fuel cell **membrane** electrode composite
IT Polyamides, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(aromatic; method of fabrication of **membrane**/electrode composite for fuel cell)
IT Catalysts
(electrocatalysts; method of fabrication of **membrane**/electrode composite for fuel cell)
IT Ionomers
RL: TEM (Technical or engineered material use); USES (Uses)
(fluoropolymers; method of fabrication of **membrane**/electrode composite for fuel cell)

IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(ionomers; method of fabrication of **membrane**/electrode composite for fuel cell)
IT Conducting polymers
Fuel cells
(method of fabrication of **membrane**/electrode composite for fuel cell)
IT Sulfonic acids, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(method of fabrication of **membrane**/electrode composite for fuel cell)
IT Synthetic polymeric fibers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polybenzazole; method of fabrication of **membrane**/electrode composite for fuel cell)
IT Solvents
(protic; method of fabrication of **membrane**/electrode composite for fuel cell)
IT Plastics, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(thermoplastics; method of fabrication of **membrane**/electrode composite for fuel cell)
IT Plastics, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(thermosetting, aromatic; method of fabrication of **membrane**/electrode composite for fuel cell)
IT 7440-06-4, **Platinum**, uses
RL: CAT (Catalyst use); USES (Uses)
(method of fabrication of **membrane**/electrode composite for fuel cell)
IT 7440-44-0, Carbon, uses
RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)
(method of fabrication of **membrane**/electrode composite for fuel cell)
IT 128324-23-2DP, 4,4'-Difluorobenzophenone-4,4'-dihydroxybiphenyl-4,4'-dihydroxybenzophenone copolymer, sulfonated **128324-24-3DP**, 4,4'-Difluorobenzophenone-4,4'-dihydroxybiphenyl-4,4'-dihydroxydiphenylsulfone copolymer, sulfonated
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(method of fabrication of **membrane**/electrode composite for fuel cell)
IT 7664-38-2, Phosphoric acid, uses 7664-39-3, Hydrofluoric acid, uses 7664-93-9, Sulfuric acid, uses 9003-01-4 **26101-52-0**, Polyvinyl sulfonic acid 27754-99-0, Polyvinyl phosphonic acid 50851-57-5, Polystyrene sulfonic acid 264624-35-3
RL: TEM (Technical or engineered material use); USES (Uses)
(method of fabrication of **membrane**/electrode composite for fuel cell)
IT **128324-24-3DP**, 4,4'-Difluorobenzophenone-4,4'-dihydroxybiphenyl-4,4'-dihydroxydiphenylsulfone copolymer, sulfonated
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(method of fabrication of **membrane**/electrode composite for fuel cell)
RN 128324-24-3 HCAPLUS
CN Methanone, bis(4-fluorophenyl)-, polymer with [1,1'-biphenyl]-4,4'-diol and 4,4'-sulfonylbis[phenol] (9CI) (CA INDEX NAME)

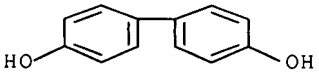
CM 1

CRN 345-92-6
CMF C13 H8 F2 O



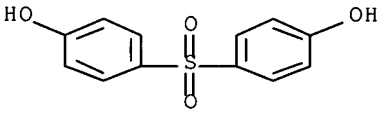
CM 2

CRN 92-88-6
CMF C12 H10 O2



CM 3

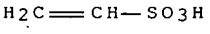
CRN 80-09-1
CMF C12 H10 O4 S



IT **26101-52-0**, Polyvinyl sulfonic acid
RL: TEM (Technical or engineered material use); USES (Uses)
(method of fabrication of **membrane**/electrode composite for fuel cell)
RN 26101-52-0 HCAPLUS
CN Ethenesulfonic acid, homopolymer (CA INDEX NAME)

CM 1

CRN 1184-84-5
CMF C2 H4 O3 S



L66 ANSWER 15 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2001:489527 HCAPLUS Full-text
DN 135:62102
TI Modifying polymeric material
IN Kanazawa, Hitoshi
PA Japan
SO PCT Int. Appl., 53 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

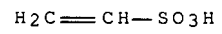
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001048065	A1	20010705	WO 2000-JP9420	20001228 <--
	W: CN, JP, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	EP 1164157	A1	20011219	EP 2000-987802	20001228 <--
	EP 1164157	B1	20070117		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 3729130	B2	20051221	JP 2001-548599	20001228 <--
	US 2003087982	A1	20030508	US 2001-914441	20010827 <--
	US 6830782	B2	20041214		
PRAI	JP 1999-375055	A	19991228 <--		
	WO 2000-JP9420	W	20001228 <--		

AB Modifying of polymer material comprises activation and treatment with a hydrophilic polymer, and/or monomer grafting. Thus, polypropylene nonwoven textile 0.3 g was treated by ozone for 20 min., then by poly(vinyl alc.) 1 g for 2 h at 50°, showing hydrophilicity 1060, 950 and 820% after 1, 2 and 3 times washing, resp., v.s. 760, 460 and 330 for a sample without ozone treatment and with 0.3 g of poly(vinyl alc.).

IC ICM C08J007-04
ICS C08J007-00; D06M014-00
CC 37-3 (Plastics Manufacture and Processing)
ST polymer hydrophilic modifying; polypropylene nonwoven textile polyvinyl alc modification
IT Polyolefin fibers
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(ethylene, sheath-core biconstituent fiber with polyester fiber; modifying polymeric material)
IT Nonwoven fabrics
Plastic films
Silk
Wool
(modifying polymeric material)
IT Fibroin
Gelatins, uses
Polyoxyalkylenes, uses
Proteins, general, uses
Sericins
RL: MOA (Modifier or additive use); USES (Uses)
(modifying polymeric material)
IT Acetate fibers, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(modifying polymeric material)
IT Caseins, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(modifying polymeric material)
IT Fibers

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(modifying polymeric material)
IT Polyamides, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(modifying polymeric material)
IT **Polybenzimidazoles**
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(modifying polymeric material)
IT Polybenzothiazoles
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(modifying polymeric material)
IT Polybenzoxazoles
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(modifying polymeric material)
IT Polyesters, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(modifying polymeric material)
IT Polyimides, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(modifying polymeric material)
IT Polyphenyls
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(modifying polymeric material)
IT Polyurethanes, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(modifying polymeric material)
IT Rayon, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(modifying polymeric material)
IT Vinal fibers
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(modifying polymeric material)
IT Carbon fibers, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(modifying polymeric material)
IT Cosmetics
Dental materials and appliances
Filters
Paper
Primary battery separators
Secondary battery separators
Textiles
(modifying polymeric material for)
IT Polypropene fibers, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(modifying polymeric material for)
IT Absorbents
(of water; modifying polymeric material for)
IT 25085-53-4, Isotactic polypropylene
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(fiber; modifying polymeric material for)
IT 79-06-1, Acrylamide, uses 79-10-7, Acrylic acid, uses 79-41-4,
Methacrylic acid, uses 88-12-0, uses 89-32-7, Pyromellitic anhydride
108-05-4, Vinyl acetate, uses 108-31-6, Maleic anhydride, uses
1184-84-5, Ethylenesulfonic acid 1337-81-1, Vinylpyridine
1484-13-5 3724-65-0, 2-Butenoic acid
RL: MOA (Modifier or additive use); USES (Uses)

(grafting monomer; modifying polymeric material)
IT 1393-70-0, cerasin 9002-89-5, Poly(vinyl alcohol) 9003-01-4, Poly(acrylic acid) 9003-39-8, Polyvinylpyrrolidone 9004-32-4, carboxymethylcellulose 9005-25-8, Starch, uses 9005-38-3, Sodium alginate 11078-31-2, Glucomannan 25249-16-5, Poly(2-hydroxyethyl methacrylate)
RL: MOA (Modifier or additive use); USES (Uses)
(modifying polymeric material)
IT 60871-72-9, Poly(p-phenylenebisbenzoxazole) 69794-31-6, Poly(benzo[1,2-d:4,5-d']bisthiazole-2,6-diyl-1,4-phenylene)
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(modifying polymeric material)
IT 9002-88-4, Polyethylene 9003-07-0, Polypropylene
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(modifying polymeric material)
IT **1184-84-5**, Ethylenesulfonic acid
RL: MOA (Modifier or additive use); USES (Uses)
(grafting monomer; modifying polymeric material)
RN 1184-84-5 HCAPLUS
CN Ethenesulfonic acid (CA INDEX NAME)



RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 16 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2001:451330 HCAPLUS Full-text
DN 135:48592
TI Ion conductive membranes for fuel cell electrolytes, their manufacture, and their fuel cells
IN Hayase, Shuji; Nakano, Yoshihiko; Oozu, Hideyuki; Hobson, Louis
PA Toshiba Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001167775	A	20010622	JP 2000-96452	20000331 <--
	JP 3425405	B2	20030714		
	JP 2003242997	A	20030829	JP 2003-79382	20000331 <--
PRAI	JP 1999-280009	A	19990930 <--		
	JP 2000-96452	A3	20000331 <--		

AB The ion conductive membranes have lower conductivity at the surface than at the core. Conductive membranes for electrolytes are treated by irradiation of electron beam on their surface for decrease of their conductivity Fuel cells comprising the membranes as electrolytes are also claimed. Fuel cells giving stable energy output are obtained by prevention of methanol crossover.
IC ICM H01M008-02
ICS C08J007-00; H01M008-10; C08L027-12
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 76
ST fuel cell ion conductor membrane; methanol crossover prevention fuel cell electrolyte

IT **Polybenzimidazoles**
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
((un)doped, composite with Nafion films; treatment of ion conductive membrane surfaces with electron beam for decrease of surface conductivity for
preparation of fuel cell electrolytes showing methanol crossover prevention)

IT Polyolefin fibers
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(ethylene, cloth; treatment of ion conductive membrane surfaces with electron beam for decrease of surface conductivity for preparation of fuel cell
electrolytes showing methanol crossover prevention)

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(fluorine- and sulfo-containing, ionomers, Nafion; treatment of ion conductive membrane surfaces with electron beam for decrease of surface conductivity for preparation of fuel cell electrolytes showing methanol crossover
prevention)

IT Fluoropolymers, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(polyoxyalkylene-, sulfo-containing, ionomers, Nafion; treatment of ion conductive membrane surfaces with electron beam for decrease of surface conductivity for preparation of fuel cell electrolytes showing methanol crossover
prevention)

IT Ionomers
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(polyoxyalkylenes, fluorine- and sulfo-containing, Nafion; treatment of ion conductive membrane surfaces with electron beam for decrease of surface conductivity for preparation of fuel cell electrolytes showing methanol crossover
prevention)

IT Electron beams
Fuel cell electrolytes
Ionic conductors
(treatment of ion conductive membrane surfaces with electron beam for decrease of surface conductivity for preparation of fuel cell electrolytes showing
methanol crossover prevention)

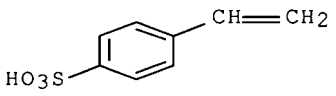
IT 9002-88-4, Polyethylene
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(cloth; treatment of ion conductive membrane surfaces with electron beam for decrease of surface conductivity for preparation of fuel cell electrolytes
showing methanol crossover prevention)

IT 7664-38-2, Phosphoric acid, uses 7664-93-9, Sulfuric acid, uses **28210-41-5**
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(dopant; treatment of ion conductive membrane surfaces with electron beam for decrease of surface conductivity for preparation of fuel cell electrolytes

showing methanol crossover prevention)
IT 25233-30-1, Polyaniline 83006-85-3
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(doped, composite with Nafion films; treatment of ion conductive membrane surfaces with electron beam for decrease of surface conductivity for
preparation of fuel cell electrolytes showing methanol crossover prevention)
IT 67-56-1, Methanol, uses
RL: DEV (Device component use); USES (Uses)
(electrolytes resistant to permeation of; treatment of ion conductive membrane surfaces with electron beam for decrease of surface conductivity for
preparation of fuel cell electrolytes showing methanol crossover prevention)
IT 9003-70-7D, Divinylbenzene-styrene copolymer, sulfonated 66796-30-3, Nafion 117 163294-14-2, Nafion 112
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(treatment of ion conductive membrane surfaces with electron beam for decrease of surface conductivity for preparation of fuel cell electrolytes showing
methanol crossover prevention)
IT **28210-41-5**
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(dopant; treatment of ion conductive membrane surfaces with electron beam for decrease of surface conductivity for preparation of fuel cell electrolytes
showing methanol crossover prevention)
RN 28210-41-5 HCAPLUS
CN Benzenesulfonic acid, 4-ethenyl-, homopolymer (CA INDEX NAME)

CM 1

CRN 98-70-4
CMF C8 H8 O3 S



L66 ANSWER 17 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2000:665521 HCAPLUS Full-text
DN 133:253541
TI Manufacture of cation exchange **membranes** having sulfo group-containing thin coatings
IN Eisele-kohler, Artur; Leuschner, Rainer; Lipinski, Matthias
PA Siemens A.-G., Germany; Infineon Technologies AG
SO Ger. Offen., 6 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1
PATENT NO. KIND DATE APPLICATION NO. DATE

PI	DE 19911413	A1	20000921	DE 1999-19911413	19990315 <--
	DE 19911413	B4	20051027		
PRAI	DE 1999-19911413		19990315 <--		

AB Sulfo group-containing cation exchange **membranes** are manufactured by plasma-polymerization-deposition of monomers that have b.p. ≤300° at 1-bar and are chemical stable at the b.p. and noncorrosive in the absence of moisture onto support **membranes** using unpulsed or pulsed plasma with power d. ≥1.5 times the initial powder d., and reaction of the resulting thin films with bisulfite solns. A typical cation exchange **membrane** was manufactured by plasma-polymerization-depositing a 3:1 (volume ratio) butadiene-SO2 mixture on a porous polyether-**polysulfone membrane** by a 100 Hz-pulsed plasma with the power d. increasing 10 fold after the 1st 30 s, treating the resulting thin film 1 h at 80°with a 40% aqueous NaHSO3 solution, and aging the treated film 24 h in pH-2 aqueous H2SO4.

IC ICM B01D067-00
ICS H01M008-02

CC 38-3 (**Plastics** Fabrication and Uses)

ST sulfonated cation exchange **membrane** manuf plasma polymn deposition; polyether **polysulfone membrane** butadiene sulfur dioxide copolymer plasma deposition; bisulfite treatment coated **membrane** cation exchanger manuf

IT Cation exchange **membranes**
Vapor deposition process
(manufacture of cation exchange **membranes** having sulfo group-containing plasma-polymerization-deposited thin coatings)

IT Polymerization
(plasma; manufacture of cation exchange **membranes** having sulfo group-containing plasma-polymerization-deposited thin coatings)

IT **Polysulfones**, uses
Polysulfones, uses
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(polyether-, base **membranes**; manufacture of cation exchange **membranes** having sulfo group-containing plasma-polymerization-deposited thin coatings)

IT Polyethers, uses
Polyethers, uses
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**polysulfone**-, base **membranes**; manufacture of cation exchange **membranes** having sulfo group-containing plasma-polymerization-deposited thin coatings)

IT Fluoropolymers, uses
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(sulfo-containing, plasma-polymerization-deposited; manufacture of cation exchange **membranes** having sulfo group-containing plasma-polymerization-deposited thin coatings)

IT 7631-90-5DP, Sodium bisulfite, reaction products with thin coatings
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manufacture of cation exchange **membranes** having sulfo group-containing plasma-polymerization-deposited thin coatings)

IT **26742-87-0DP**, Butadiene-sulfur dioxide copolymer, reaction products with sodium bisulfite 270251-43-9DP, Vinylsulfonyl fluoride homopolymer, reaction products with sodium bisulfite 294634-90-5DP, Pentafluorostyrene-vinylsulfonyl fluoride copolymer, reaction products with sodium bisulfite

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(plasma-polymerization-deposited; manufacture of cation exchange **membranes** having sulfo group-containing plasma-polymerization-deposited thin coatings)

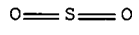
IT 9003-17-2DP, Polybutadiene, reaction products with bisulfites
9011-14-7DP, PMMA, reaction products with bisulfites 25013-04-1DP, reaction products with bisulfites 25510-99-0DP, Octafluorocyclobutane homopolymer, reaction products with bisulfites **26101-52-0DP**, Vinylsulfonic acid homopolymer, reaction products with bisulfites 94509-60-1DP, Pentafluorostyrene homopolymer, reaction products with bisulfites
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(plasma-polymerization-deposited; manufacture of cation exchange **membranes** having sulfo group-containing plasma-polymerization-deposited thin coatings)

IT **26742-87-0DP**, Butadiene-sulfur dioxide copolymer, reaction products with sodium bisulfite
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(plasma-polymerization-deposited; manufacture of cation exchange **membranes** having sulfo group-containing plasma-polymerization-deposited thin coatings)

RN 26742-87-0 HCAPLUS
CN 1,3-Butadiene, polymer with sulfur dioxide (8CI, 9CI) (CA INDEX NAME)

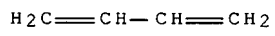
CM 1

CRN 7446-09-5
CMF O2 S



CM 2

CRN 106-99-0
CMF C4 H6

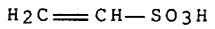


IT **26101-52-0DP**, Vinylsulfonic acid homopolymer, reaction products with bisulfites
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(plasma-polymerization-deposited; manufacture of cation exchange **membranes** having sulfo group-containing plasma-polymerization-deposited thin coatings)

RN 26101-52-0 HCAPLUS
CN Ethenesulfonic acid, homopolymer (CA INDEX NAME)

CM 1

CRN 1184-84-5
CMF C2 H4 O3 S



L66 ANSWER 18 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2000:260778 HCAPLUS Full-text
DN 132:294808
TI Composite solid polymer electrolyte **membranes**
IN Formato, Richard M.; Kovar, Robert F.; Osenar, Paul; Landrau, Nelson; Rubin, Leslie S.
PA Foster-Miller, Inc., USA
SO PCT Int. Appl., 95 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000022684	A2	20000420	WO 1999-US19476	19990826 <--
	WO 2000022684	A3	20000720		
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	WO 9910165	A1	19990304	WO 1998-US17898	19980828 <--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6248469	B1	20010619	US 1999-261349	19990303 <--
	CA 2342237	A1	20000420	CA 1999-2342237	19990826 <--
	AU 200023415	A	20000501	AU 2000-23415	19990826 <--
	EP 1116292	A2	20010718	EP 1999-967058	19990826 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2003528420	T	20030924	JP 2000-576501	19990826 <--
PRAI	WO 1998-US17898	W	19980828 <--		
	US 1999-261349	A	19990303 <--		
	US 1997-57233P	P	19970829 <--		
	WO 1998-US178	W	19980828 <--		
	WO 1999-US19476	W	19990826 <--		

AB The present invention relates to composite solid polymer electrolyte **membranes** (SPEMs) which include a porous polymer substrate (typically a liquid crystal polymer) interpenetrated with an ion-conducting material (typically a perfluorinated ionomer). SPEMs of the present invention are useful in electrochem. applications, including fuel cells and electrodialysis.
IC ICM H01M

CC 38-3 (**Plastics** Fabrication and Uses)
Section cross-reference(s): 52
ST composite solid polymer electrolyte **membrane**; fuel cell polymer electrolyte **membrane**; electrodialysis polymer electrolyte **membrane**; liq crystal polymer interpenetrating network electrolyte; perfluorinated ionomer interpenetrating network electrolyte
IT Pervaporation
(apparatus; composite solid polymer electrolyte **membranes**)
IT Polyamides, uses
Polyketones
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(aromatic; composite solid polymer electrolyte **membranes**)
IT Dialyzers
Electrolytic cells
Interpenetrating polymer networks
Liquid crystals, polymeric
Primary batteries
(composite solid polymer electrolyte **membranes**)
IT **Polybenzimidazoles**
Polybenzothiazoles
Polybenzoxazoles
Polyimides, uses
Polyoxyphenylenes
Polyphenyls
Polysulfones, uses
Polythiophenylenes
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(composite solid polymer electrolyte **membranes**)
IT Fuel cells
(direct methanol or hydrogen; composite solid polymer electrolyte **membranes**)
IT Dialyzers
(electrodialyzers; composite solid polymer electrolyte **membranes**)
IT Polyimides, uses
Polyimides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(fluorine-containing; composite solid polymer electrolyte **membranes**)
IT Ionomers
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(fluoropolymers; composite solid polymer electrolyte **membranes**)
IT Fluoropolymers, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(ionomers; composite solid polymer electrolyte **membranes**)
IT Polymer electrolytes
(**membrane**; composite solid polymer electrolyte **membranes**)
IT Polyimides, uses
Polyimides, uses
Polyketones
Polyketones
Polysulfones, uses
Polysulfones, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(polyether-; composite solid polymer electrolyte **membranes**)

IT Fluoropolymers, uses
Fluoropolymers, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyimide-; composite solid polymer electrolyte **membranes**)

IT Polyethers, uses
Polyethers, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(polyimide-; composite solid polymer electrolyte **membranes**)

IT Polyethers, uses
Polyethers, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(polyketone-; composite solid polymer electrolyte **membranes**)

IT Polyquinoxalines
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(polyphenylquinoxalines; composite solid polymer electrolyte **membranes**)

IT Polysulfones, uses
Polysulfones, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(polysulfide-, aromatic; composite solid polymer electrolyte **membranes**)

IT Polysulfides
Polysulfides
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(polysulfone-, aromatic; composite solid polymer electrolyte **membranes**)

IT Polyethers, uses
Polyethers, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(polysulfone-; composite solid polymer electrolyte **membranes**)

IT **Membranes**, nonbiological
(solid polymer electrolyte; composite solid polymer electrolyte **membranes**)

IT Plastics, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(thermoplastics; composite solid polymer electrolyte **membranes**)

IT Plastics, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(thermosetting; composite solid polymer electrolyte **membranes**)

IT **25667-42-9DP**, sulfonated
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(Ultrason; composite solid polymer electrolyte **membranes**)

IT **25135-51-7DP**, Udel, sulfonated 25212-74-2DP, PPS, sulfonated 63496-24-2P, Nafion EW1100 154281-38-6DP, Radel R, sulfonated 220998-11-8P, 4,4'-(Hexafluoroisopropylidene)bis(phthalic

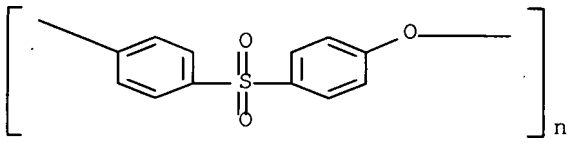
anhydride-m-Phenylenediamine-sodium 2,4-diaminobenzenesulfonate copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(composite solid polymer electrolyte **membranes**)

IT 88-63-1P, 2,4-Diaminobenzenesulfonic acid 3177-22-8P, Sodium 2,4-diaminobenzenesulfonate
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(composite solid polymer electrolyte **membranes**)

IT 9003-01-4, Polyacrylic acid 24938-64-5 24938-67-8, Poly[oxy(2,6-dimethyl-1,4-phenylene)] 24938-68-9, 2,6-Diphenylphenol homopolymer, sru 25035-37-4, p-Phenylenediamine-terephthalic acid copolymer 25134-01-4, 2,6-Dimethylphenol homopolymer **26101-52-0**, Polyvinyl sulfonic acid 26353-84-4, 2,6-Diphenylphenol homopolymer 27754-99-0, Polyvinyl phosphonic acid 50851-57-5, Polystyrene sulfonic acid 264624-35-3, Trifluorostyrenesulfonic acid homopolymer
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(composite solid polymer electrolyte **membranes**)

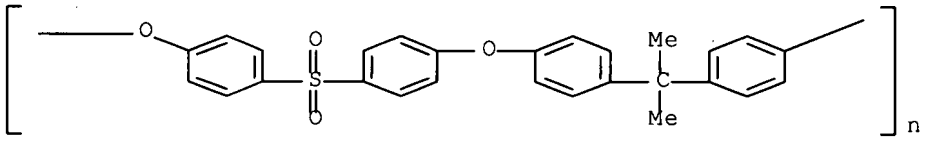
IT **25667-42-9DP**, sulfonated
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(Ultrason; composite solid polymer electrolyte **membranes**)

RN 25667-42-9 HCAPLUS
CN Poly(oxy-1,4-phenylenesulfonyl-1,4-phenylene) (CA INDEX NAME)



IT **25135-51-7DP**, Udel, sulfonated
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(composite solid polymer electrolyte **membranes**)

RN 25135-51-7 HCAPLUS
CN Poly[oxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (CA INDEX NAME)

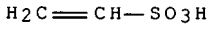


IT **26101-52-0**, Polyvinyl sulfonic acid
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(composite solid polymer electrolyte **membranes**)

RN 26101-52-0 HCAPLUS
CN Ethenesulfonic acid, homopolymer (CA INDEX NAME)

CM 1

CRN 1184-84-5
CMF C2 H4 O3 S



L66 ANSWER 19 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2000:77023 HCAPLUS Full-text
DN 132:112723
TI Manufacture of hollow fiber **membranes** for ultrapure water
IN Ozushi, Kenji
PA Asahi Chemical Industry Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2000033242	A	20000202	JP 1998-205249	19980721 <--
PRAI JP 1998-205249		19980721 <--		

AB Ultrapure water is used in the entire process in manufacture of hollow fiber **membranes** by wet spinning. The **membranes** are especially useful in manufacture of ultrapure water used in semiconductor industry.
IC ICM B01D067-00
ICS B01D063-02; C02F001-44
CC 61-5 (Water)
Section cross-reference(s): **38**
ST hollow fiber **membrane** wet spinning manuf; ultrapure water wet spinning hollow fiber; water ultrapure manuf hollow fiber **membrane**
IT **Polysulfones**, processes
Polysulfones, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(fiber, hollow-fiber **membranes**; manufacture of hollow fiber **membranes** by wet spinning using ultrapure water)
IT Fibers
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(hollow, **membranes**; manufacture of hollow fiber **membranes** by wet spinning using ultrapure water)
IT Acrylic fibers, processes
Polysulfones, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(hollow-fiber **membranes**; manufacture of hollow fiber **membranes** by wet spinning using ultrapure water)
IT **Membranes**, nonbiological
(hollow-fiber; manufacture of hollow fiber **membranes** by wet spinning using ultrapure water)
IT Synthetic polymeric fibers, processes
Synthetic polymeric fibers, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**polysulfones**, hollow-fiber **membranes**; manufacture of

hollow fiber **membranes** by wet spinning using ultrapure water)

IT Water purification
(ultrafiltration, hollow fiber **membranes** for; manufacture of hollow fiber **membranes** by wet spinning using ultrapure water)

IT Waters
(ultrapure; manufacture of hollow fiber **membranes** by wet spinning using ultrapure water)

IT **26658-88-8P**, Acrylonitrile-methyl acrylate-sodium methallylsulfonate copolymer
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); **PREP (Preparation)**; PROC (Process); USES (Uses)
(manufacture of hollow fiber **membranes** by wet spinning using ultrapure water)

IT **25135-51-7**, Udel P 3500
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manufacture of hollow fiber **membranes** by wet spinning using ultrapure water)

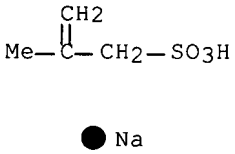
IT **26658-88-8P**, Acrylonitrile-methyl acrylate-sodium methallylsulfonate copolymer
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); **PREP (Preparation)**; PROC (Process); USES (Uses)
(manufacture of hollow fiber **membranes** by wet spinning using ultrapure water)

RN 26658-88-8 HCAPLUS

CN 2-Propenoic acid, methyl ester, polymer with 2-propenenitrile and sodium 2-methyl-2-propene-1-sulfonate (1:1) (CA INDEX NAME)

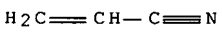
CM 1

CRN 1561-92-8
CMF C4 H8 O3 S . Na



CM 2

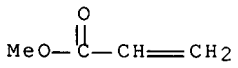
CRN 107-13-1
CMF C3 H3 N



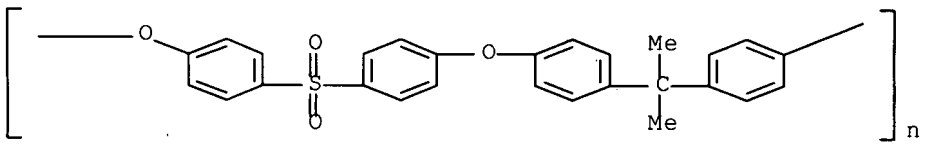
CM 3

CRN 96-33-3

CMF C4 H6 O2



IT **25135-51-7**, Udel P 3500
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manufacture of hollow fiber **membranes** by wet spinning using ultrapure water)
RN 25135-51-7 HCAPLUS
CN Poly[oxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (CA INDEX NAME)



L66 ANSWER 20 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1999:566112 HCAPLUS Full-text
DN 131:185914
TI **Membrane** filtration of polymer containing solutions
IN Zakikhani, Mohsen
PA Albright & Wilson Uk Limited, UK
SO PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9943744	A1	19990902	WO 1999-GB299	19990128 <--
	W: AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, MG, MK, MN, MX, NO, NZ, PL, SG, SK, SL, TR, TT, UA, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 939100	A1	19990901	EP 1998-306674	19980820 <--
	EP 939100	B1	20050126		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	AT 287921	T	20050215	AT 1998-306674	19980820 <--
	US 6162340	A	20001219	US 1998-139791	19980825 <--
	CA 2321727	A1	19990902	CA 1999-2321727	19990128 <--
	AU 9922908	A	19990915	AU 1999-22908	19990128 <--
	AU 737961	B2	20010906		
	BR 9907840	A	20001024	BR 1999-7840	19990128 <--
	JP 2002504610	T	20020212	JP 2000-533490	19990128 <--
	NZ 505533	A	20021220	NZ 1999-505533	19990128 <--
	IN 193696	A1	20040731	IN 2000-MN164	20000707 <--

NO 2000004166 A 20000821 NO 2000-4166 20000821 <--
PRAI GB 1998-3812 A 19980225 <--
WO 1999-GB299 W 19990128 <--

AB In a method for recovering polymers in a substantially pure form from a solution containing the polymers (e.g., acrylic acid-vinylphosphonic acid copolymer), the solution is 1st treated with a reactant (e.g. an acid and/or a sequestrant; 98% H2SO4) to form the free polymers and salts of the reactant and 2nd the solution is treated to remove the salts therefrom and in a final stage the polymer solution is concentrated (e.g. to 20% solution) and the polymers are recovered (spray drying). The 2nd treatment step may consist of **membrane**-filtration (e.g., ES 404 **membrane**), ion-exchange or electrodialysis.

IC ICM C08J011-08
ICS C08J003-14

CC 38-2 (Plastics Fabrication and Uses)

ST acrylic acid copolymer **membrane** filtration recovery; vinylphosphonic acid copolymer recovery; sulfuric acid treatment polymer soln; spray dry recovery polymer; ion exchanger electrodialysis recovery polymer

IT Electrodialysis
Ion exchange **membranes**
Membrane filtration
(**membrane** filtration of polymer containing solns.)

IT 2809-21-4, 1-Hydroxyethane-1,1-diphosphonic acid
RL: TEM (Technical or engineered material use); USES (Uses)
(Briquest ADPA 60A, polymer treated by; **membrane** filtration of polymer containing solns.)

IT 27754-99-0P, Poly(vinylphosphonic acid) 27936-88-5P, Acrylic acid-vinylphosphonic acid copolymer 34162-79-3DP, terpolymeric derivs. 35065-09-9P 55972-36-6P, Methacrylic acid-vinylphosphonic acid copolymer **167682-78-2P**, Acrylic acid-vinylsulfonic acid-vinylphosphonic acid copolymer
RL: PUR (Purification or recovery); PREP (Preparation)
(**membrane** filtration of polymer containing solns.)

IT 111972-91-9, GR 90PP 123174-39-0, ES 404 190086-17-0, Filmtec NF 45 240132-34-7, GR 95PP
RL: TEM (Technical or engineered material use); USES (Uses)
(**membranes**; **membrane** filtration of polymer containing solns.)

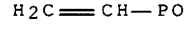
IT 7647-01-0, Hydrochloric acid, uses 7664-38-2, Phosphoric acid, uses 7664-93-9, Sulfuric acid, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polymer treated by; **membrane** filtration of polymer containing solns.)

IT **167682-78-2P**, Acrylic acid-vinylsulfonic acid-vinylphosphonic acid copolymer
RL: PUR (Purification or recovery); PREP (Preparation)
(**membrane** filtration of polymer containing solns.)

RN 167682-78-2 HCAPLUS
CN 2-Propenoic acid, polymer with ethenesulfonic acid and ethenylphosphonic acid (9CI) (CA INDEX NAME)

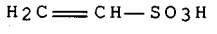
CM 1

CRN 1746-03-8
CMF C2 H5 O3 P



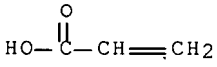
CM 2

CRN 1184-84-5
CMF C2 H4 O3 S



CM 3

CRN 79-10-7
CMF C3 H4 O2



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 21 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1999:3377 HCAPLUS Full-text
DN 130:67511
TI Semipermeable encapsulated **membranes** with improved acid and base stability, process for their manufacture, and their use
IN Linder, Charles; Nemes, Mara; Ketraro, Reuven
PA Crosswinds, Inc., USA; Koch Membrane Systems, Inc.
SO Eur. Pat. Appl., 12 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 884096	A1	19981216	EP 1998-201919	19980610 <--
	EP 884096	B1	20050914		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	IL 121046	A	20010724	IL 1997-121046	19970610 <--
	CA 2240212	A1	19981210	CA 1998-2240212	19980609 <--
	CA 2240212	C	20050222		
	AU 9870107	A	19981217	AU 1998-70107	19980610 <--
	AU 731196	B2	20010329		
	CN 1207956	A	19990217	CN 1998-102416	19980610 <--
	JP 11090195	A	19990406	JP 1998-162682	19980610 <--
	MX 9804656	A	20000630	MX 1998-4656	19980610 <--
	US 6086764	A	20000711	US 1998-95248	19980610 <--
	ES 2251754	T3	20060501	ES 1998-201919	19980610 <--
PRAI	IL 1997-121046	A	19970610 <--		

AB A process for the preparation of semipermeable **membranes** with improved acid and base stability includes: (a) coating a base- and acid-stable ultrafiltration (UF) **membrane** support polymer, with a high mol. weight amphoteric polyelectrolyte coating polymer optionally in solution, the

amphoteric polyelectrolyte containing both cationic and anionic groups and in addition primary and secondary amine groups, the solution optionally containing a latent internal crosslinker compound that is a polyfunctional compound that crosslinks the coating polymer only during a curing step at elevated temps. and basic pH; (b) draining or washing the coated support; (c) reacting the coating with a solution of an external crosslinking compound that is a polyfunctional compound, not overly reactive so as not to be hydrolyzed prematurely in solution, the time of exposure to the external crosslinking compound being sufficient to ensure its diffusion into the bulk of the coating, so that the crosslinking is effected not only on the solution-polymer coating interface, but throughout the bulk of the coating as well. The sequence (a)-(c) may optionally be repeated a number of times to give multiple crosslinked layers. The coated **membrane** is cured by heating at an elevated temperature and basic pH to complete crosslinking by the external crosslinking mol. and if present, also effect crosslinking by the latent internal crosslinking agent which is activated only at elevated temps.

IC ICM B01D069-12
ICS B01D067-00

CC 38-3 (**Plastics** Fabrication and Uses)
Section cross-reference(s): 48

ST semipermeable encapsulated **membrane** amphoteric polyelectrolyte

IT Polyelectrolytes
(amphoteric; semipermeable encapsulated **membranes** with improved acid and base stability, process for their manufacture, and their use)

IT Polysulfones, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(aromatic; semipermeable encapsulated **membranes** with improved acid and base stability, process for their manufacture, and their use)

IT Polyketones
Polyketones
Polysulfones, uses
Polysulfones, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polyether-; semipermeable encapsulated **membranes** with improved acid and base stability, process for their manufacture, and their use)

IT Polyethers, uses
Polyethers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polyketone-; semipermeable encapsulated **membranes** with improved acid and base stability, process for their manufacture, and their use)

IT Polyethers, uses
Polyethers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polysulfone-; semipermeable encapsulated **membranes** with improved acid and base stability, process for their manufacture, and their use)

IT Polyamines
Polyolefins
Polyoxyarylenes
Polysulfones, uses
Polythiophenylenes
RL: TEM (Technical or engineered material use); USES (Uses)
(semipermeable encapsulated **membranes** with improved acid and base stability, process for their manufacture, and their use)

IT **Membranes**, nonbiological
(semipermeable; semipermeable encapsulated **membranes** with improved acid and base stability, process for their manufacture, and their

use)

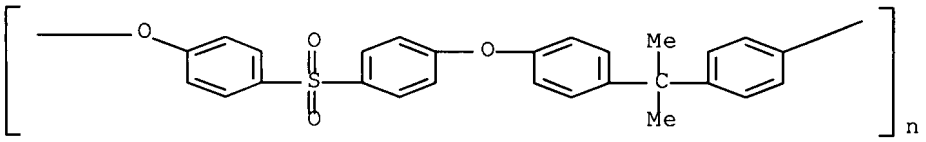
IT 79-43-6, Dichloroacetic acid, uses 108-77-0, 2,4,6-Trichloro-s-triazine 631-64-1, Dibromoacetic acid 16110-89-7 21369-77-7 26445-02-3, Dichloropropionic acid 140708-63-0 161823-92-3 218157-06-3 218157-10-9 218157-13-2 218157-16-5
RL: MOA (Modifier or additive use); USES (Uses)
(crosslinker; semipermeable encapsulated **membranes** with improved acid and base stability, process for their manufacture, and their use)

IT 108-77-0D, Cyanuric chloride, reaction products with polyethyleneimine derivs. 3764-01-0D, 2,4,6-Trichloropyrimidine, reaction products with polyethyleneimine derivs. 9002-98-6 9002-98-6D, reaction products with 6-chlorobis-2,4-(4-sulfonic anilino acid)triazine and cyanuric chloride 9003-53-6 **25135-51-7** 26336-38-9, Polyvinylamine 30551-89-4, Polyallylamine 41484-72-4D, reaction products with polyethyleneimine and cyanuric chloride 62238-80-6, Polydiallylamine 78231-68-2, Styrenesulfonic acid-vinylaniline copolymer 217958-01-5, Styrenesulfonic acid-vinylamine copolymer **217958-13-9**, Cyanuric chloride-sodium vinylsulfonate-vinylamine copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(semipermeable encapsulated **membranes** with improved acid and base stability, process for their manufacture, and their use)

IT **25135-51-7 217958-13-9**, Cyanuric chloride-sodium vinylsulfonate-vinylamine copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(semipermeable encapsulated **membranes** with improved acid and base stability, process for their manufacture, and their use)

RN 25135-51-7 HCAPLUS

CN Poly[oxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (CA INDEX NAME)

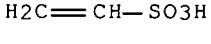


RN 217958-13-9 HCAPLUS

CN Ethenesulfonic acid, sodium salt, polymer with ethenamine and 2,4,6-trichloro-1,3,5-triazine (9CI) (CA INDEX NAME)

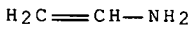
CM 1

CRN 3039-83-6
CMF C2 H4 O3 S . Na



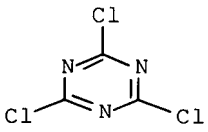
CM 2

CRN 593-67-9
CMF C2 H5 N



CM 3

CRN 108-77-0
CMF C3 Cl3 N3



RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 22 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1998:756149 HCAPLUS Full-text
DN 130:39391
TI Surface modification of commercial polyamide reverse osmosis **membranes** by radical grafting. An ATR-FTIR study
AU Belfer, S.; Purinson, Y.; Kedem, O.
CS Institutes Applied Research, Ben-Gurion University Negev, Beer Sheva, 84105, Israel
SO Acta Polymerica (**1998**), 49(10-11), 574-582
CODEN: ACPODY; ISSN: 0323-7648
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
AB A new grafting procedure was developed for surface modification of com. polyamide reverse osmosis **membranes**. Acidic and neutral acrylic monomers and sulfo-containing vinyl monomers were successfully grafted from aqueous solns. under mild conditions. The modifications were monitored by ATR-FTIR spectra. The characteristic peaks of functional groups introduced by grafting were evaluated. The spectral findings correlated with physicochem. properties of the **membranes**.
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 37
ST polyamide reverse osmosis **membrane** radical grafting
IT Polyoxyalkylenes, uses
Polyoxyalkylenes, uses
Polysulfones, uses
Polysulfones, uses
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(polyamide-, graft; properties of polyamide reverse osmosis **membranes** surface-modified by radical grafting with vinyl monomers)
IT Polyamides, uses

Polyamides, uses
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(polyoxyalkylene-, graft; properties of polyamide reverse osmosis **membranes** surface-modified by radical grafting with vinyl monomers)

IT Polyamides, uses
Polyamides, uses
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(**polysulfone-**, graft; properties of polyamide reverse osmosis **membranes** surface-modified by radical grafting with vinyl monomers)

IT Polyamides, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(properties of polyamide reverse osmosis **membranes** surface-modified by radical grafting with vinyl monomers)

IT **Membranes**, nonbiological
(reverse-osmosis; properties of polyamide reverse osmosis **membranes** surface-modified by radical grafting with vinyl monomers)

IT 124363-47-9, BW 30 153192-06-4, Filmtec SW 30 193636-27-0, CPA 2
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(properties of polyamide reverse osmosis **membranes** surface-modified by radical grafting with vinyl monomers)

IT 204316-12-1P, CPA 2-methacrylic acid graft copolymer 216769-53-8P, Methacrylic acid-Filmtec SW 30 graft copolymer 216769-58-3P, BW 30-methacrylic acid graft copolymer 216769-67-4P **216769-71-0P** 216769-75-4P 216769-80-1P
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); **PREP (Preparation)**; USES (Uses)
(properties of polyamide reverse osmosis **membranes** surface-modified by radical grafting with vinyl monomers)

IT **216769-71-0P**
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); **PREP (Preparation)**; USES (Uses)
(properties of polyamide reverse osmosis **membranes** surface-modified by radical grafting with vinyl monomers)

RN 216769-71-0 HCAPLUS
CN Ethenesulfonic acid, sodium salt, polymer with Filmtec SW 30, graft (9CI) (CA INDEX NAME)

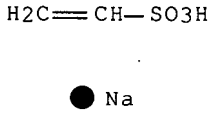
CM 1

CRN 153192-06-4
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 3039-83-6
CMF C2 H4 O3 S . Na



RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

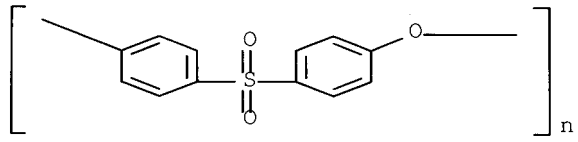
L66 ANSWER 23 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1998:324971 HCAPLUS Full-text
DN 128:292496
TI Opaque reaction matrix for the analysis of whole blood
IN Grage, Henry M., Jr.; Douglas, Joel S.; Lee, Pat S.
PA Mercury Diagnostics, Inc., USA; Grage, Henry M., Jr.; Douglas, Joel S.; Lee, Pat S.
SO PCT Int. Appl., 25 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9820348	A1	19980514	WO 1997-US20053	19971031 <--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9851661	A	19980529	AU 1998-51661	19971031 <--
	GB 2321967	A	19980812	GB 1998-11841	19971031 <--
	GB 2321967	B	20010502		
	DE 19781288	T0	19990311	DE 1997-19781288	19971031 <--
	DE 19781288	B4	20050929		
	US 5968765	A	19991019	US 1997-961942	19971031 <--
PRAI	US 1996-30767P	P	19961108 <--		
	WO 1997-US20053	W	19971031 <--		

AB A test strip for use in determining the presence or concentration of an analyte in whole blood is disclosed. The test strip is a porous **membrane** having disposed thereon (a) a separating agent capable of separating from whole blood, red blood cells and a fluid component substantially free of red blood cells; (b) an indicating reagent system capable of indicating the presence or concentration of an analyte in the fluid component by producing a spectrophotometric change upon contact with the fluid component; and (c) an opaque filler capable of reducing spectrophotometric interference caused by the presence of the red blood cells. Also disclosed are methods of testing whole blood for the presence or concentration of an analyte using the test strip.

IC ICM G01N033-52
ICS B01D069-14
CC 9-1 (Biochemical Methods)
ST opaque reaction matrix analysis blood
IT **Membranes**, nonbiological
(Porous; opaque reaction matrix for anal. of whole blood)
IT Plastics, uses
RL: NUU (Other use, unclassified); USES (Uses)

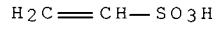
(bead; opaque reaction matrix for anal. of whole blood)
IT Limestone, uses
RL: NUU (Other use, unclassified); USES (Uses)
(dust; opaque reaction matrix for anal. of whole blood)
IT Blood analysis
Erythrocyte
Fillers
Spectrophotometry
(opaque reaction matrix for anal. of whole blood)
IT Amino acids, uses
Polyamides, uses
Polyoxyalkylenes, uses
Polysulfones, uses
RL: NUU (Other use, unclassified); USES (Uses)
(opaque reaction matrix for anal. of whole blood)
IT 9001-37-0, Glucose oxidase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(opaque reaction matrix for anal. of whole blood)
IT 64-18-6D, Formic acid, compds., uses 77-92-9, Citric acid, uses
77-92-9D, compds. 83-86-3, Phytic acid 6915-15-7, Malic acid
9002-89-5, Polyvinyl alcohol 9003-01-4, Polyacrylic acid 9003-39-8,
Polyvinylpyrrolidone 9004-64-2, Hydroxypropyl cellulose 9012-76-4,
Chitosan 13463-67-7, Titanium dioxide, uses 25322-68-3, Polyethylene
glycol **25667-42-9 26101-52-0**, Polyvinyl sulfonic acid
50851-57-5, Polystyrene sulfonic acid
RL: NUU (Other use, unclassified); USES (Uses)
(opaque reaction matrix for anal. of whole blood)
IT 7440-70-2, Calcium, uses 14807-96-6, Talcum, uses
RL: NUU (Other use, unclassified); USES (Uses)
(powder; opaque reaction matrix for anal. of whole blood)
IT **25667-42-9 26101-52-0**, Polyvinyl sulfonic acid
RL: NUU (Other use, unclassified); USES (Uses)
(opaque reaction matrix for anal. of whole blood)
RN 25667-42-9 HCAPLUS
CN Poly(oxy-1,4-phenylenesulfonyl-1,4-phenylene) (CA INDEX NAME)



RN 26101-52-0 HCAPLUS
CN Ethenesulfonic acid, homopolymer (CA INDEX NAME)

CM 1

CRN 1184-84-5
CMF C2 H4 O3 S



RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 24 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1996:701721 HCAPLUS Full-text
DN 125:340979
TI Process for separating sodium from aqueous effluents resulting from the reprocessing of spent nuclear fuel elements
IN Lemaire, Marc; Foos, Jacques; Guy, Alain; Gaubert, Eric; Bardot, Colette; Chomel, Rodolph; Radecky, Jean-Jacques; Maurel, Alain; Barnier, Henri
PA Commissariat a l'Energie Atomique, Fr.; Compagnie Generale Des Matieres Nucleaires
SO Brit. UK Pat. Appl., 30 pp.
CODEN: BAXXDU
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 2298953	A	19960918	GB 1996-4777	19960306 <--
	GB 2298953	B	19990317		
	FR 2731831	A1	19960920	FR 1995-3137	19950317 <--
	FR 2731831	B1	19970425		
	US 5925254	A	19990720	US 1996-614828	19960308 <--
	JP 08292294	A	19961105	JP 1996-59500	19960315 <--
PRAI	FR 1995-3137	A	19950317 <--		

AB Effluent is introduced into a tangential filtration module, whose **membranes** are made from polyaramide, sulfonated polysulfone or perfluorinated ionomer, so as to collect a permeate P containing Na, depleted in radioactive elements and a retentate R enriched in radioactive elements. The radioactive elements may be complexed with ethylene diamine tetraacetic acid, a polyacrylic acid, a polyvinyl sulfonic acid, or a polyethylene imine, to give an improved separation The effluent is subject to a pressure differential across the **membrane.**

IC ICM G21F009-04
ICA G21C019-44
CC 71-11 (Nuclear Technology)
ST sodium sepn radioactive waste **membrane**
IT Fluoropolymers
Ionomers
RL: DEV (Device component use); USES (Uses)
(**membrane**; process for separating sodium from aqueous effluents resulting from reprocessing of spent nuclear fuel elements)
IT **Membranes**
Radioactive wastes
(process for separating sodium from aqueous effluents resulting from reprocessing of spent nuclear fuel elements)
IT Polyamides, uses
RL: DEV (Device component use); USES (Uses)
(process for separating sodium from radioactive waste aqueous solution containing
strontium, cesium, and uranium)
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(fluorine- and sulfo-containing, ionomers, **membrane**; process for separating sodium from aqueous effluents resulting from reprocessing of spent
nuclear fuel elements)
IT **Polybenzimidazoles**
RL: DEV (Device component use); USES (Uses)
(**polybenzimidazolones**, process for separating sodium from

radioactive waste aqueous solution containing strontium, cesium, and uranium)

IT Fluoropolymers
RL: DEV (Device component use); USES (Uses)
(polyoxyalkylene-, sulfo-containing, ionomers, **membrane**; process for separating sodium from aqueous effluents resulting from reprocessing of spent nuclear fuel elements)

IT Ionomers
RL: DEV (Device component use); USES (Uses)
(polyoxyalkylenes, fluorine- and sulfo-containing, **membrane**; process for separating sodium from aqueous effluents resulting from reprocessing of spent nuclear fuel elements)

IT 139-33-3, Ethylene diamine tetraacetic acid, disodium salt 9002-98-6 9003-01-4, Polyacrylic acid **25053-27-4**, Poly(vinyl sulfonic acid, sodium salt)
RL: MOA (Modifier or additive use); USES (Uses)
(complexing agent; process for separating sodium from aqueous effluents resulting from reprocessing of spent nuclear fuel elements)

IT 65338-98-9
RL: MOA (Modifier or additive use); USES (Uses)
(complexing agent; process for separating sodium from radioactive waste aqueous solution containing strontium, cesium, and uranium)

IT 119314-71-5, NF 70
RL: DEV (Device component use); USES (Uses)
(**membrane**; process for separating sodium from aqueous effluents resulting from reprocessing of spent nuclear fuel elements)

IT 7440-23-5, Sodium, processes
RL: REM (Removal or disposal); PROC (Process)
(process for separating sodium from aqueous effluents resulting from reprocessing of spent nuclear fuel elements)

IT 9004-34-6D, Cellulose, ester or ether 24937-79-9, Polyvinylidene fluoride 61596-70-1D, sulfonated
RL: DEV (Device component use); USES (Uses)
(process for separating sodium from radioactive waste aqueous solution containing strontium, cesium, and uranium)

IT 7440-24-6, Strontium, uses 7440-46-2, Cesium, uses 7440-61-1, Uranium, uses **25667-42-9D**, sulfonated
RL: MOA (Modifier or additive use); USES (Uses)
(process for separating sodium from radioactive waste aqueous solution containing strontium, cesium, and uranium)

IT **25053-27-4**, Poly(vinyl sulfonic acid, sodium salt)
RL: MOA (Modifier or additive use); USES (Uses)
(complexing agent; process for separating sodium from aqueous effluents resulting from reprocessing of spent nuclear fuel elements)

RN 25053-27-4 HCAPLUS
CN Ethenesulfonic acid, homopolymer, sodium salt (CA INDEX NAME)

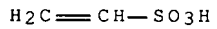
CM 1

CRN 26101-52-0
CMF (C2 H4 O3 S)x
CCI PMS

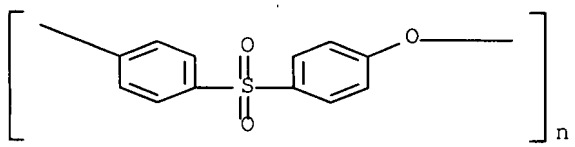
CM 2

CRN 1184-84-5

CMF C2 H4 O3 S



IT **25667-42-9D**, sulfonated
RL: MOA (Modifier or additive use); USES (Uses)
(process for separating sodium from radioactive waste aqueous solution containing
strontium, cesium, and uranium)
RN 25667-42-9 HCAPLUS
CN Poly(oxy-1,4-phenylenesulfonyl-1,4-phenylene) (CA INDEX NAME)



L66 ANSWER 25 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1996:672187 HCAPLUS Full-text
DN 125:278544
TI Flame-retardant fiber composites including halo- and antimony-containing polymeric synthetic fibers and fabrics
IN Matsumoto, Takaharu; Ogawa, Takahiro; Yamada, Noryuki; Adachi, Masayuki
PA Kanegafuchi Chemical Ind, Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 08218259	A	19960827	JP 1995-28130	19950216 <--
PRAI JP 1995-28130		19950216 <--		

AB Fibers comprise 15-84% fibers of 17%-halo-containing polymers including 6-50% Sb compds., 15-84% natural and/or synthetic fibers, and 1-40% organic heat-resistant fibers, and the fabrics prepared therefrom are useful for fireproof wearing apparel showing improved feeling and moisture absorption. Thus, a composite fabric of 52 parts 51:48:1 acrylonitrile-vinylidene chloride-Na p-styrenesulfonate copolymer fibers containing 25% Sb2O3, 45 parts cotton, and 3 parts Technora showed feeling similar to cotton fabric and good flame retardance.
IC ICM D04H001-42
ICS D01F001-07; D02G003-04; D03D015-12
CC 40-9 (Textiles and Fibers)
ST flame retardant fiber composite; halo polymer fireproof fiber; antimony oxide fireproof fiber; vinylidene chloride copolymer fiber blend; acrylonitrile copolymer fiber blend; sodium styrenesulfonate copolymer fiber blend; cotton mixed fiber flame retardant; arom polyamide fiber blend; heat resistant fiber blend fireproof
IT Fire-resistant materials
Heat-resistant materials

Wearing apparel
(flame-retardant fiber composites of halo- and antimony-containing polymers, natural or synthetic fibers, and heat-resistant fibers for wearing apparel)

IT Acrylic fibers, uses
Synthetic fibers, polymeric
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PRP (Properties); PREP (Preparation); USES (Uses)
(acrylonitrile-vinylidene chloride, flame-retardant fiber composites of halo- and antimony-containing polymers, natural or synthetic fibers, and heat-resistant fibers for wearing apparel)

IT Textiles
(cotton, flame-retardant fiber composites of halo- and antimony-containing polymers, natural or synthetic fibers, and heat-resistant fibers for wearing apparel)

IT Polyamide fibers, uses
Synthetic fibers, polymeric
RL: MOA (Modifier or additive use); USES (Uses)
(diaminodiphenyl ether-phenylenediamine-terephthalic acid, heat-resistant; flame-retardant fiber composites of halo- and antimony-containing polymers, natural or synthetic fibers, and heat-resistant fibers for wearing apparel)

IT **Polybenzimidazoles**
RL: MOA (Modifier or additive use); USES (Uses)
(fiber, heat-resistant; flame-retardant fiber composites of halo- and antimony-containing polymers, natural or synthetic fibers, and heat-resistant fibers for wearing apparel)

IT Polyamide fibers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(isophthalic acid-phenylenediamine, heat-resistant; flame-retardant fiber composites of halo- and antimony-containing polymers, natural or synthetic fibers, and heat-resistant fibers for wearing apparel)

IT Polyethers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(polyamide-, fiber, heat-resistant; flame-retardant fiber composites of halo- and antimony-containing polymers, natural or synthetic fibers, and heat-resistant fibers for wearing apparel)

IT Synthetic fibers, polymeric
RL: MOA (Modifier or additive use); USES (Uses)
(**polybenzimidazoles**, heat-resistant; flame-retardant fiber composites of halo- and antimony-containing polymers, natural or synthetic fibers, and heat-resistant fibers for wearing apparel)

IT 182195-13-7, Oxydianiline-phenylenediamine-terephthalic acid copolymer
RL: MOA (Modifier or additive use); USES (Uses)
(fiber, heat-resistant; flame-retardant fiber composites of halo- and antimony-containing polymers, natural or synthetic fibers, and heat-resistant fibers for wearing apparel)

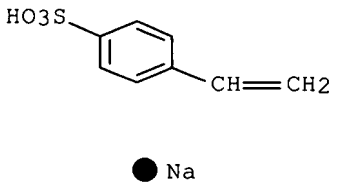
IT **38639-89-3P**, Acrylonitrile-sodium p-styrenesulfonate-vinylidene chloride copolymer 55348-73-7P, 2-Acrylamide-2-methylpropylsulfonic acid-acrylonitrile-vinyl chloride copolymer
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PRP (Properties); PREP (Preparation); USES (Uses)
(fiber; flame-retardant fiber composites of halo- and antimony-containing polymers, natural or synthetic fibers, and heat-resistant fibers for wearing apparel)

IT 1309-64-4, Antimony trioxide, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fireproofing agent; flame-retardant fiber composites of halo- and antimony-containing polymers, natural or synthetic fibers, and heat-resistant fibers for wearing apparel)

IT **38639-89-3P**, Acrylonitrile-sodium p-styrenesulfonate-vinylidene chloride copolymer
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PRP (Properties); PREP (Preparation); USES (Uses)
(fiber; flame-retardant fiber composites of halo- and antimony-containing polymers, natural or synthetic fibers, and heat-resistant fibers for wearing apparel)
RN 38639-89-3 HCAPLUS
CN Benzenesulfonic acid, 4-ethenyl-, sodium salt (1:1), polymer with 1,1-dichloroethene and 2-propenenitrile (CA INDEX NAME)

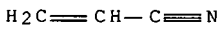
CM 1

CRN 2695-37-6
CMF C8 H8 O3 S . Na



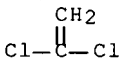
CM 2

CRN 107-13-1
CMF C3 H3 N



CM 3

CRN 75-35-4
CMF C2 H2 Cl2



L66 ANSWER 26 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1995:561225 HCAPLUS Full-text
DN 122:292300
TI Ion-exchange **membranes** containing functional groups bearing positive and(or) negative ionic charges and their manufacture
IN Andreola, Christopher; Chlanda, Frederick P.; Huang, Jian-Ping
PA AlliedSignal Inc., USA
SO PCT Int. Appl., 34 pp.
CODEN: PIXXD2

DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9416002	A1	19940721	WO 1993-US12445	19931221 <--
	W: AU, CA, JP, KR				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2153973	A1	19940721	CA 1993-2153973	19931221 <--
	AU 9459570	A	19940815	AU 1994-59570	19931221 <--
	EP 679167	A1	19951102	EP 1994-905467	19931221 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	JP 08508758	T	19960917	JP 1993-516034	19931221 <--
	CN 1091678	A	19940907	CN 1994-100751	19940115 <--
	US 5643968	A	19970701	US 1994-345017	19941123 <--
PRAI	US 1993-6010	A	19930115 <--		
	WO 1993-US12445	W	19931221 <--		

AB Title **membranes** are based on graft copolymers comprising a polymer having a main chain containing aromatic rings and a polymerizable vinyl or ring containing compound which contains ≥1 functional group which displays ion exchange functionality or may be converted to display ion exchange functionality, which is grafted onto the polymer on at ≥1 of aromatic rings or on ≥1 benzylic carbon atom of the aromatic rings. The ion exchange **membranes** of the present invention display good transport properties in strong acids and resistance to fouling. A typical **membrane** was manufactured by grafting 2-vinylpyridine onto Udel P1700 (**polysulfone**) in THF-hexane mixture at -71 to -63°, casting the graft polymer from DMF, and annealing the film in 1 N HCl at 70° overnight.

IC ICM C08J005-22
ICS C08F283-00; B01D071-68
CC 37-3 (**Plastics** Manufacture and Processing)
Section cross-reference(s): **38**
ST ion exchange **membrane** graft arom copolymer; vinylpyridine grafted **polysulfone** ion exchange **membrane**; fouling resistant ion exchange **membrane**; acid resistant ion exchange **membrane**
IT **Polysulfones**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(blends with vinylpyridine-grafted **polysulfones**; ion-exchange **membranes** containing functional groups bearing pos. and(or) neg. ionic charges and their manufacture)
IT Acid-resistant materials
(ion-exchange **membranes** containing functional groups bearing pos. and(or) neg. ionic charges and their manufacture)
IT Polyethers, uses
Polyphenyls
Polythiophenylenes
RL: TEM (Technical or engineered material use); USES (Uses)
(vinyl compound-grafted; ion-exchange **membranes** containing functional groups bearing pos. and(or) neg. ionic charges and their manufacture)
IT Dialyzers
(electro-, **membranes**, ion-exchange **membranes** containing functional groups bearing pos. and(or) neg. ionic charges and their manufacture)
IT Ion exchangers
(**membranes**, ion-exchange **membranes** containing functional groups bearing pos. and(or) neg. ionic charges and their manufacture)

IT **Polysulfones**, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyether-, vinyl compound-grafted; ion-exchange **membranes** containing functional groups bearing pos. and(or) neg. ionic charges and their manufacture)

IT Polyethers, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**polysulfone-**, vinyl compound-grafted; ion-exchange **membranes** containing functional groups bearing pos. and(or) neg. ionic charges and their manufacture)

IT Polyoxyphenylenes
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(reaction products, with vinyl compound polymers; ion-exchange **membranes** containing functional groups bearing pos. and(or) neg. ionic charges and their manufacture)

IT 155076-44-1, Udel P1835
RL: TEM (Technical or engineered material use); USES (Uses)
(blends with vinylpyridine-grafted **polysulfones**; ion-exchange **membranes** containing functional groups bearing pos. and(or) neg. ionic charges and their manufacture)

IT 74-88-4DP, Methyl iodide, reaction products with vinylpyridine-grafted polyether-**polysulfones 163184-26-7P 163184-27-8P 163184-28-9P 163184-29-0P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(ion-exchange **membranes** containing functional groups bearing pos. and(or) neg. ionic charges and their manufacture)

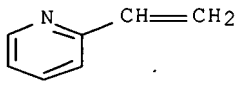
IT **163184-26-7P 163184-27-8P 163184-28-9P 163184-29-0P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(ion-exchange **membranes** containing functional groups bearing pos. and(or) neg. ionic charges and their manufacture)

RN 163184-26-7 HCAPLUS

CN Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-ethenylpyridine and 1,1'-sulfonylbis[4-chlorobenzene], graft (9CI) (CA INDEX NAME)

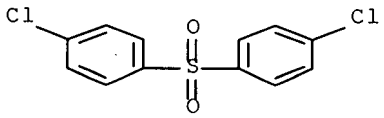
CM 1

CRN 100-69-6
CMF C7 H7 N



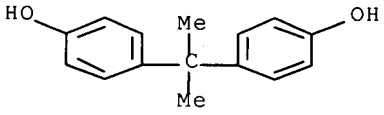
CM 2

CRN 80-07-9
CMF C12 H8 Cl2 O2 S



CM 3

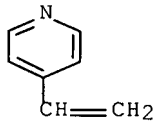
CRN 80-05-7
CMF C15 H16 O2



RN 163184-27-8 HCAPLUS
CN Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 4-ethenylpyridine and 1,1'-sulfonylbis[4-chlorobenzene], graft (9CI) (CA INDEX NAME)

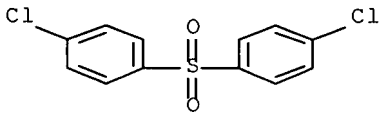
CM 1

CRN 100-43-6
CMF C7 H7 N



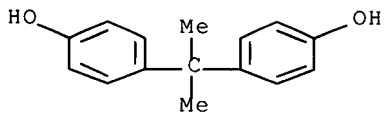
CM 2

CRN 80-07-9
CMF C12 H8 Cl2 O2 S



CM 3

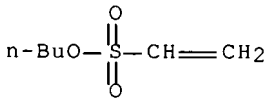
CRN 80-05-7
CMF C15 H16 O2



RN 163184-28-9 HCAPLUS
CN Ethenesulfonic acid, butyl ester, polymer with 2,6-dimethylphenol, graft (9CI) (CA INDEX NAME)

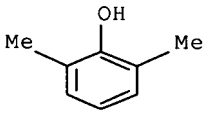
CM 1

CRN 3851-92-1
CMF C6 H12 O3 S



CM 2

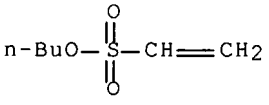
CRN 576-26-1
CMF C8 H10 O



RN 163184-29-0 HCAPLUS
CN Ethenesulfonic acid, butyl ester, polymer with 4,4'-(1-methylethylidene)bis[phenol] and 1,1'-sulfonylbis[4-chlorobenzene], graft (9CI) (CA INDEX NAME)

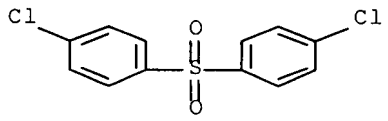
CM 1

CRN 3851-92-1
CMF C6 H12 O3 S



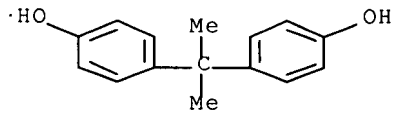
CM 2

CRN 80-07-9
CMF C12 H8 Cl2 O2 S



CM 3

CRN 80-05-7
CMF C15 H16 O2



L66 ANSWER 27 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1994:670117 HCAPLUS Full-text
DN 121:270117
TI Thixotropic magnetorheological materials
IN Weiss, Keith D.; Nixon, Donald A.; Carlson, J. David; Margida, Anthony J.
PA Lord Corp., USA
SO PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9410693	A1	19940511	WO 1993-US9939	19931018	<--
	W: BY, CA, JP, KZ, LV, RU, UA, UZ					
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
	CA 2148000	A1	19940511	CA 1993-2148000	19931018	<--
	CA 2148000	C	20001010			
	EP 667029	A1	19950816	EP 1994-900358	19931018	<--
	EP 667029	B1	19980923			
	R: DE, FR, GB, IE, IT, LU, MC, NL, SE					
	JP 08502783	T	19960326	JP 1993-511121	19931018	<--
	RU 2111572	C1	19980520	RU 1995-109903	19931018	<--
	JP 3335630	B2	20021021	JP 1994-511121	19931018	<--
	CN 1088020	A	19940615	CN 1993-120747	19931030	<--
	US 5645752	A	19970708	US 1995-575240	19951220	<--
PRAI	US 1992-968655	A	19921030	<--		
	WO 1993-US9939	W	19931018	<--		
	US 1994-355821	B1	19941214	<--		

AB A magnetorheol. material contains a carrier fluid, a particle component, and a thixotropic additive to provide stability against particle settling. The thixotropic additive can be a H-bonding thixotropic agent, a polymer-modified metal oxide, or a mixture thereof. The use of a thixotropic additive creates

a thixotropic network which is unusually effective at minimizing particle settling in a magnetorheol. material.

IC ICM H01F001-28
CC 77-8 (Magnetic Phenomena)
ST thixotropic magnetorheol material
IT Thixotropic substances
(magnetorheol.)
IT Hydraulic fluids
(magnetorheol. materials containing)
IT Aluminates
Fatty acids, uses
Hydrocarbon oils
Paraffin oils
Peptides, uses
Phosphates, uses
Polyamic acids
Polyamides, uses
Polyamines
Polyanhydrides
Polybenzimidazoles
Polybenzoxazoles
Polycarbonates, uses
Polyoxyalkylenes, uses
Polyoxyphenylenes
Polysulfones, uses
Polyureas
Silanes
Silathianes
Silazanes
Silica gel, uses
Siloxanes and Silicones, uses
Titanates
Urethane polymers, uses
Vinyl acetal polymers
Zirconates
RL: TEM (Technical or engineered material use); USES (Uses)
(magnetorheol. materials containing)
IT Magnetic substances
(magnetorheol., thixotropic)
IT Polyesters, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(aromatic, magnetorheol. materials containing)
IT Hydrocarbons, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(chloro, magnetorheol. materials containing)
IT Siloxanes and Silicones, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(di-Me, hydroxyalkyl Me, ethers with polypropylene glycol mono-C1-3-alkyl ether, Silwet L 7500; surfactant, magnetorheol. materials containing)
IT Alcohols, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fatty, magnetorheol. materials containing)
IT Naphthenic acids, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(iron salts, magnetorheol. materials containing)
IT Rheology
(magneto-, materials having, thixotropic)
IT Transformers
(oils, magnetorheol. materials containing)

IT Polyamides, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(poly(amino acids), magnetorheol. materials containing)
IT Acetals
RL: TEM (Technical or engineered material use); USES (Uses)
(poly-, magnetorheol. materials containing)
IT Polyhydrazides
Polyimides, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polyamide-, magnetorheol. materials containing)
IT **Polybenzimidazoles**
RL: TEM (Technical or engineered material use); USES (Uses)
(**polybenzimidazolones**, magnetorheol. materials containing)
IT Polysulfones, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polyether-, magnetorheol. materials containing)
IT Polyamides, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polyhydrazide-, magnetorheol. materials containing)
IT Polyamides, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polyimide-, magnetorheol. materials containing)
IT Siloxanes and Silicones, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polyoxyalkylene-, magnetorheol. materials containing)
IT Polycarbosilanes
RL: TEM (Technical or engineered material use); USES (Uses)
(polysilalkylenes, magnetorheol. materials containing)
IT Polycarbosilanes
RL: TEM (Technical or engineered material use); USES (Uses)
(polysilarylenes, magnetorheol. materials containing)
IT Polyethers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polysulfone-, magnetorheol. materials containing)
IT Polyoxyalkylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(siloxane-, magnetorheol. materials containing)
IT Iron alloy, base
RL: TEM (Technical or engineered material use); USES (Uses)
(magnetorheol. materials containing)
IT 12597-69-2, Steel, uses
RL: USES (Uses)
(low-carbon, magnetorheol. materials containing)
IT 57-11-4, Octadecanoic acid, uses 57-11-4D, Octadecanoic acid, esters 95-16-9D, Benzothiazole, derivs., polymers 143-07-7D, Lauric acid, esters 504-74-5D, Imidazolidine, derivs., polymers 1332-37-2, Iron oxide, uses 7440-02-0, Nickel, uses 7440-48-4, Cobalt, uses 7631-86-9, Silica, uses 7664-38-2, Phosphoric acid, uses 8007-43-0, Sorbitan sesquioleate 9002-81-7, Poly(oxymethylene) 9002-83-9, Polychlorotrifluoroethylene 9002-85-1, Poly(vinylidene chloride) 9002-86-2, Polychloroethene 9002-89-5, Poly(vinyl alcohol) 9002-91-9, Polyacetaldehyde 9002-98-6, Polyethyleneimine 9003-01-4, Poly(acrylic acid) 9003-05-8, Polyacrylamide 9003-09-2, Poly(methylvinyl ether) 9003-20-7, Poly(vinyl acetate) 9003-32-1, Polyethylacrylate 9003-42-3, Polyethylmethacrylate 9003-44-5, Poly(isobutylvinyl ether) 9003-49-0, Polybutylacrylate 9003-63-8, Polybutylmethacrylate 9003-95-6, Poly(vinyl stearate) 9010-98-4, Polychloroprene 9011-14-7, Polymethylmethacrylate 9016-00-6D, Dimethylsilanediol homopolymer, SRU, dimethylamino-terminated 9019-37-8, Polyazophenylene 9022-52-0, Polychlorostyrene 9060-47-3 11100-68-8, Silicon steel, uses

12018-01-8, Chromium dioxide 12640-64-1, Iron carbide 13463-67-7, Titania, uses 15114-27-9, Ferrous oleate 24937-79-9, Poly(vinylidene fluoride) 24938-37-2, Poly(ethylene adipate 24969-06-0, Polyepichlorohydrin 24969-13-9, Polypivalolactone 24979-97-3, Polytetrahydrofuran 24980-41-4, Polycaprolactone 24991-33-1, Poly(vinyl chloroacetate) 25014-12-4, Polymethacrylamide 25014-41-9, Polyacrylonitrile 25035-37-4, Poly(p-phenylene-terephthalamide) 25036-43-5 25036-49-1, Polydiethyleneglycoladipate 25038-02-2, Poly(hexafluoropropylene oxide 25038-59-9, uses 25038-87-3, Poly(methylvinyl ketone) 25067-61-2, Polymethacrylonitrile 25068-14-8, Polyacrolein 25086-16-2 25087-26-7, Poly(methacrylic acid) 25101-03-5, Poly(propylene adipate) 25104-18-1, Polylysine 25104-37-4, Poly(vinylethyl ether) 25120-30-3, Polymethacrolein 25154-92-1, Polychloral 25190-06-1 25191-13-3, Polyproline 25191-17-7, Polyalanine 25215-75-2, Polycarbodiimide 25233-30-1, Polyphenyleneamine 25248-22-0, Poly(ethyleneoxy benzoate) 25249-07-4, Polyhydroxyproline 25322-68-3 25322-69-4, Poly(oxypropylene glycol) 25496-72-4, Glycerol monooleate 25513-46-6, Poly(glutamic acid) 25567-89-9, Poly(vinyl formate) 25619-78-7, Polytyrosine 25667-16-7 25667-42-9 25704-33-0, Poly(methyl-α-chloroacrylate) 25718-94-9, Polyglycine 25719-52-2, Polylaurylmethacrylate 25768-50-7, Polycyclohexylmethacrylate 25791-89-3, Polymethyl-3,3,3-trifluoropropylsiloxane 25821-52-7, Polyserine 25951-24-0, Polysarcosine 25988-32-3, Poly(isopropenylmethyl ketone 26009-03-0, Polyglycolide 26023-30-3, Polylactide 26062-94-2, Poly(butylene terephthalate) 26063-00-3, Polyhydroxybutyrate **26101-52-0**, Poly(ethylenesulfonic acid) 26222-20-8, Poly(propylene sebacate) 26336-38-9, Polyvinylamine 26760-99-6, Poly(ethylene azelate) 26793-30-6, Piperazine, polymer with hexanedioic acid 26967-89-5 27073-87-6, Polyacetone 27616-41-7, Poly(phenyl isocyanate) 28155-86-4, Poly(vinylidene cyanide) 29408-67-1 29409-13-0, Poly(vinyl isocyanate) 31152-55-3, Polybenzoin 31833-61-1, Poly(p-phenylenesulfone) 31900-57-9D, Dimethylsilanediol homopolymer, electroneg.-group-terminated 32032-92-1 37245-77-5, Iron nitride 39342-71-7, Polydimethylphenol 42388-40-9 53895-29-7, Polystyrylpyridine 55069-85-7, Poly(hydroxybenzoic acid 55738-52-8, Polybenzamide 58130-03-3 59546-61-1, Poly[oxy[(3-cyanopropyl)methylsilylene]] 61678-15-7 62238-79-3, Polybismaleimide 65503-84-6 81775-66-8, Emphos CS 141 97917-34-5 106392-12-5 118529-50-3 123069-60-3 138184-94-8, Cabosil TS 720 156048-32-7, Dimethylsilanediol-ethylene oxide copolymer 156048-34-9, Diphenylsilanediol-dimethylsilanediol copolymer 156048-35-0, Methylphenylsilanediol-dimethylsilanediol copolymer 156395-51-6, Methyl-3,3,3-trifluoropropylsilanediol homopolymer 156395-52-7, Methyl-3,3,3-trifluoropropylsilanediol-dimethylsilanediol copolymer 156623-20-0, Glycidoxypropylmethylsilanediol-dimethylsilanediol copolymer 156623-21-1, (Aminoethylaminopropyl)methylsilanediol-dimethylsilanediol copolymer 158465-53-3 158465-54-4 158465-59-9 158465-60-2 158465-62-4 158465-63-5, Poly[oxy[bis(3-cyanopropyl)silylene]] 158465-64-6 158465-66-8 158465-68-0 158465-70-4 158465-71-5 158465-72-6 158465-73-7 158516-24-6 158535-34-3 158535-36-5 158535-38-7 158606-68-9, Polyaspartamide 158766-37-1, Cab-O-Sil TS 610
RL: TEM (Technical or engineered material use); USES (Uses)
(magnetorheol. materials containing)

IT 7439-89-6, Iron, uses 12645-49-7, Manganese zinc ferrite
RL: USES (Uses)
(magnetorheol. materials containing powder of)

IT **26101-52-0**, Poly(ethylenesulfonic acid)
RL: TEM (Technical or engineered material use); USES (Uses)
(magnetorheol. materials containing)

RN 26101-52-0 HCAPLUS
CN Ethenesulfonic acid, homopolymer (CA INDEX NAME)

CM 1

CRN 1184-84-5
CMF C2 H4 O3 S

L66 ANSWER 28 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1991:609757 HCAPLUS Full-text
DN 115:209757
TI Asymmetric semipermeable **membrane** for treatment of biological liquids
IN Brun, Claude; Angleraud, Rene
PA Hospal Industrie, Fr.
SO Eur. Pat. Appl., 27 pp.
CODEN: EPXXDW
DT Patent
LA French
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	EP 436447	A1	19910710	EP 1990-420527	19901205	<--
	EP 436447	B1	19940601			
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	FR 2656234	A1	19910628	FR 1989-17397	19891222	<--
	FR 2656234	B1	19920320			
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	ES 2054306	T3	19940801	ES 1990-420527	19901205	<--
	CA 2032991	A1	19910623	CA 1990-2032991	19901221	<--
	CA 2032991	C	20020528			
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	JP 3054200	B2	20000619			
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	RU 2040961	C1	19950809	RU 1990-4831880	19901221	<--
	CN 1052618	A	19910703	CN 1990-110151	19901222	<--
	CN 1031320	B	19960320			
PRAI	FR 1989-17397	A	19891222	<--		
	EP 1990-420527	A	19901205	<--		

AB Title **membranes** comprise hydrophobic polymers, acrylonitrile copolymers, sulfonic acid salts, unsatd. olefinic monomers, and are useful as plasmapheresis, hemodialysis, and/or ultrafiltration **membranes** in artificial kidney. Thus, a typical **membrane** prepared from a composition containing poly(vinylidene fluoride) (Kynar 301F) 19.8, 96.7:3.3 acrylonitrile-Na methallylsulfonate copolymer 2.2, H2O 5, glycerol 5, and N-methyl-2-pyrrolidone 68% and H2O as the coagulation liquid had good dimensional stability.
IC ICM B01D071-42
ICS B01D071-68; B01D071-34; B01D071-30
CC 38-3 (**Plastics** Fabrication and Uses)
Section cross-reference(s): 63
ST polyvinylidene fluoride semipermeable **membrane**; acrylonitrile copolymer semipermeable **membrane**; sodium methallylsulfonate copolymer semipermeable **membrane**; glycerol contg semipermeable

membrane; plasmapheresis **membrane** artificial kidney; hemodialysis **membrane** artificial kidney; ultrafiltration **membrane** artificial kidney; biolog liq treatment semipermeable **membrane**

IT Kidney
(artificial, **membranes** for hemodialysis and/or ultrafiltration for)

IT Dialyzers
(hemo-, **membranes**, preparation of, from hydrophobic polymers, acrylonitrile copolymers, sulfonic acid salts and unsatd. olefinic monomers)

IT Filters and Filtration apparatus
(**membranes**, asym., preparation of, from hydrophobic polymers, acrylonitrile copolymers, sulfonic acid salts and unsatd. olefinic monomers)

IT Dialyzers
Plasmapheresis
(**membranes**, preparation of, from hydrophobic polymers, acrylonitrile copolymers, sulfonic acid salts and unsatd. olefinic monomers)

IT Polysulfones, uses and miscellaneous
RL: USES (Uses)
(polyether-, for manufacture of semipermeable **membranes** for treatment of biolog. liqs.)

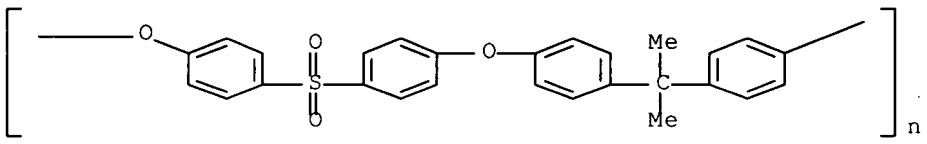
IT Polyethers, uses and miscellaneous
RL: USES (Uses)
(polysulfone-, for manufacture of semipermeable **membranes** for treatment of biolog. liqs.)

IT Filters and Filtration apparatus
(ultra-, **membranes**, preparation of, from hydrophobic polymers, acrylonitrile copolymers, sulfonic acid salts and unsatd. olefinic monomers)

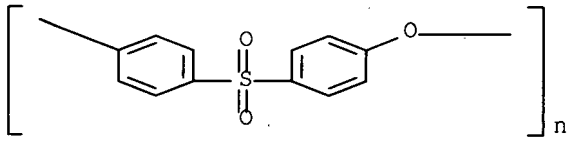
IT 56-81-5, 1,2,3-Propanetriol, uses and miscellaneous 24937-79-9, Poly(vinylidene fluoride) **25135-51-7** **25667-42-9**, Victrex 4800G **27103-76-0**, Acrylonitrile-sodium methallylsulfonate copolymer
RL: USES (Uses)
(for manufacture of semipermeable **membranes** for treatment of biolog. liqs.)

IT **25135-51-7** **25667-42-9**, Victrex 4800G **27103-76-0**, Acrylonitrile-sodium methallylsulfonate copolymer
RL: USES (Uses)
(for manufacture of semipermeable **membranes** for treatment of biolog. liqs.)

RN 25135-51-7 HCAPLUS
CN Poly[oxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (CA INDEX NAME)



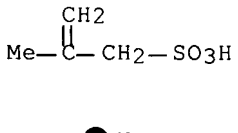
RN 25667-42-9 HCAPLUS
CN Poly(oxy-1,4-phenylenesulfonyl-1,4-phenylene) (CA INDEX NAME)



RN 27103-76-0 HCAPLUS
CN 2-Propene-1-sulfonic acid, 2-methyl-, sodium salt, polymer with 2-propenenitrile (9CI) (CA INDEX NAME)

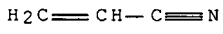
CM 1

CRN 1561-92-8
CMF C4 H8 O3 S . Na



CM 2

CRN 107-13-1
CMF C3 H3 N



L66 ANSWER 29 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1991:542194 HCAPLUS Full-text
DN 115:142194
TI Ellipsometric studies of plasma protein adsorption on **membrane** polymers for blood purification
AU Mandenius, Carl Fredrik; Ljunggren, Lennart
CS Chem. Cent., Univ. Lund, Lund, S-221 00, Swed.
SO Biomaterials (**1991**), 12(4), 369-73
CODEN: BIMADU; ISSN: 0142-9612
DT Journal
LA English
AB Ellipsometric studies on adsorption of the human plasma proteins: albumin , IgG, and fibrinogen, to surfaces of polyamide, polysulfone, polyether-polycarbonate and polyacrylonitrile copolymers are presented. Thin layers of the polymers (20-30 nm) were cast onto silicon dioxide/silicon wafers by a spin-coating procedure. The variations observed in surface concentration and adsorption time of the proteins were significant in all 4 polymers investigated.
CC 63-7 (Pharmaceuticals)
ST blood plasma protein adsorption polymer **membrane**; ellipsometry

protein adsorption polymer **membrane**

IT Proteins, biological studies
RL: BIOL (Biological study)
(adsorption of human plasma, on polymer **membranes** for blood purification, ellipsometric study of)

IT Albumins, biological studies
RL: BIOL (Biological study)
(adsorption of human serum, on polymer **membranes** for blood purification, ellipsometric study of)

IT Ellipsometry
(adsorption of plasma proteins on polymeric **membranes** for blood filtration study by)

IT Fibrinogens
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(adsorption of, on polymer **membranes** for blood purification, ellipsometric study of)

IT Polyamides, biological studies
Polymers, biological studies
Polysulfones, biological studies
RL: BIOL (Biological study)
(**membranes** for blood purification, plasma protein adsorption on, ellipsometric study of)

IT Adsorption kinetics
(of proteins of human plasma, on polymer **membranes** for blood purification, ellipsometric study of)

IT Plasmapheresis
(polymer **membranes** for, plasma proteins adsorption on, ellipsometric study of)

IT Immunoglobulins
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(G, adsorption of, on polymer **membranes** for blood purification, ellipsometric study of)

IT Dialyzers
(hemo-, **membranes**, polymers for, plasma proteins adsorption on, ellipsometric study of)

IT Polyethers, biological studies
RL: BIOL (Biological study)
(polycarbonate-, **membranes** for blood purification, plasma protein adsorption on, ellipsometric study of)

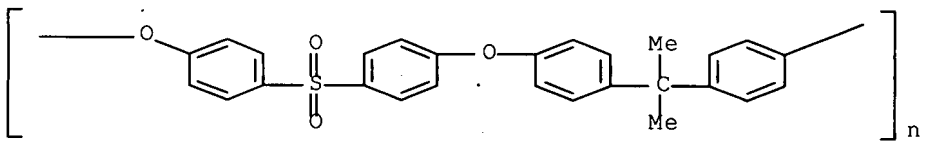
IT Polycarbonates, biological studies
RL: BIOL (Biological study)
(polyether-, **membranes** for blood purification, plasma protein adsorption on, ellipsometric study of)

IT 9071-17-4 **25135-51-7 27103-76-0** 53834-90-5
108795-16-0
RL: BIOL (Biological study)
(**membranes** for blood purification, plasma protein adsorption on, ellipsometric study of)

IT **25135-51-7 27103-76-0**
RL: BIOL (Biological study)
(**membranes** for blood purification, plasma protein adsorption on, ellipsometric study of)

RN 25135-51-7 HCAPLUS

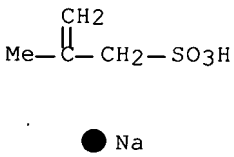
CN Poly[oxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (CA INDEX NAME)



RN 27103-76-0 HCAPLUS
CN 2-Propene-1-sulfonic acid, 2-methyl-, sodium salt, polymer with 2-propenenitrile (9CI) (CA INDEX NAME)

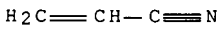
CM 1

CRN 1561-92-8
CMF C4 H8 O3 S . Na



CM 2

CRN 107-13-1
CMF C3 H3 N



L66 ANSWER 30 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1991:145047 HCAPLUS Full-text
DN 114:145047
TI Solvent-resistant polymeric **membranes** containing crosslinks
IN Linder, Charles; Nemas, Mara; Perry, Mordechai; Ketraro, Reuven
PA Aligena A.-G., Switz.
SO Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 392982	A2	19901017	EP 1990-810287	19900410 <--
	EP 392982	A3	19910109		
	EP 392982	B1	19941214		
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE				
	IL 89970	A	19941021	IL 1989-89970	19890414 <--
	US 5024765	A	19910618	US 1989-416224	19891002 <--
	US 5039421	A	19910813	US 1989-415156	19891002 <--
	GB 2238966	A	19910619	GB 1989-24411	19891030 <--

	GB 2238966	B	19930825		
	GB 2247419	A	19920304	GB 1989-24412	19891030 <--
	GB 2247419	B	19930825		
	IL 93887	A	19950629	IL 1990-93887	19900326 <--
	EP 421916	A2	19910410	EP 1990-810286	19900410 <--
	EP 421916	A3	19921021		
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE				
	US 5032282	A	19910716	US 1990-507567	19900411 <--
	US 5049282	A	19910917	US 1990-507566	19900411 <--
	JP 03000119	A	19910107	JP 1990-99184	19900413 <--
	JP 3145093	B2	20010312		
	JP 03118823	A	19910521	JP 1990-99183	19900413 <--
PRAI	IL 1989-89970	A	19890414 <--		
	US 1989-415156	A	19891002 <--		
	GB 1989-24411	A	19891030 <--		
	US 1989-416224	A	19891002 <--		
	GB 1989-24412	A	19891030 <--		

AB The title **membranes**, useful for microfiltration, ultrafiltration, or reverse osmosis, comprise a substrate which is prepared from an uncrosslinked acrylonitrile (co)polymer and crosslinked and ≥1 coating which is prepared from a composition containing hydrophilic monomers, oligomers, or polymers containing reactive groups and crosslinked. Thus, a polyacrylonitrile substrate was crosslinked with NaOEt, immersed in a diazonium solution (p-phenylenediamine-NaNO2-HCl), immersed in NaOH solution, crosslinked with cyanuric chloride, treated with polyethyleneimine solution, treated with a reactive dye solution, immersed in Na2CO3 solution, and immersed in NaOH solution to prepare a **membrane** with Congo Red rejection 99.9% and water flux 2000 L/m2-day.

IC ICM B01D069-12
ICS B01D071-42; B01D061-02; B01D061-14

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 37

ST polyacrylonitrile **membrane** crosslinking; polyethylenimine **membrane** crosslinking; cyanuric chloride crosslinking **membrane**; water purifn **membrane** crosslinking; solvent resistance **membrane** crosslinking; filtration **membrane** crosslinking; osmosis reverse **membrane** crosslinking

IT Glass fibers, uses and miscellaneous
Polyamides, uses and miscellaneous
Polyoxyphenylenes
Polysulfones, uses and miscellaneous
RL: USES (Uses)
(**membranes** supported by, porous, solvent-resistant)

IT Crosslinking
(of **membranes** for filtration and reverse osmosis)

IT Filtering materials
(micro-, **membranes**, crosslinked, solvent-resistant)

IT **Polysulfones**, uses and miscellaneous
RL: USES (Uses)
(polyether-, **membranes** supported by, porous, solvent-resistant)

IT Polyethers, uses and miscellaneous
RL: USES (Uses)
(**polysulfone-**, **membranes** supported by, porous, solvent-resistant)

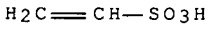
IT Water purification
(reverse osmosis, **membranes** for, crosslinked)

IT Chemically resistant materials
(solvent-resistant, **membranes**, crosslinked, for filtration and reverse osmosis)

IT Filtering materials
(ultra-, **membranes**, crosslinked, solvent-resistant)
IT 1314-23-4, Zirconium oxide, uses and miscellaneous 1344-28-1, Alumina, uses and miscellaneous 7440-44-0, Carbon, uses and miscellaneous 7631-86-9, Silica, uses and miscellaneous 7782-42-5, Graphite, uses and miscellaneous 9002-84-0, PTFE 9002-86-2 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-53-6, Polystyrene 24937-79-9, Poly(vinylidene fluoride) 25038-59-9, PET polymer, uses and miscellaneous
RL: USES (Uses)
(**membranes** supported by, porous, solvent-resistant)
IT 132817-58-4P 132817-59-5P **132817-60-8P** 132817-61-9P 132817-62-0P 132817-63-1P 132817-64-2P 132817-65-3P 132817-66-4P 132817-67-5P 132839-96-4P
RL: **PREP (Preparation)**
(**membranes**, crosslinked, solvent-resistant, manufacture of)
IT **132817-60-8P**
RL: **PREP (Preparation)**
(**membranes**, crosslinked, solvent-resistant, manufacture of)
RN 132817-60-8 HCAPLUS
CN Ethenesulfonic acid, polymer with ethenamine, 2-propenenitrile and 2,4,6-trichloro-1,3,5-triazine (9CI) (CA INDEX NAME)

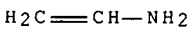
CM 1

CRN 1184-84-5
CMF C2 H4 O3 S



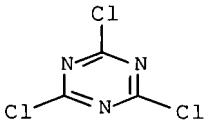
CM 2

CRN 593-67-9
CMF C2 H5 N



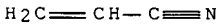
CM 3

CRN 108-77-0
CMF C3 Cl3 N3



CM 4

CRN 107-13-1
CMF C3 H3 N



L66 ANSWER 31 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1990:462897 HCAPLUS Full-text
DN 113:62897
TI Test of complexing agents for the concentration of metal ion solutions by ultrafiltration
AU Waeschke, Holger
CS Sekt. Verfahrenstech., Tech. Hochsch. Koethen, Koethen, DDR-4370, Ger. Dem. Rep.
SO Zeitschrift fuer Chemie (**1990**), 30(3), 101-2
CODEN: ZECEAL; ISSN: 0044-2402
DT Journal
LA German
AB Various complexing agents were tested for the concentration of 10-4M solns. of CuSO4, NiSO4, ZnSO4, and AgNO3 by ultrafiltration through cellulose acetate, polyamide, or polyurethane **membranes**. Sufficient filtration rates and metal ion retention capacities were attained with linear oligomeric ε-caprolctam, poly(acrylic acid), allylsulfonate-acrylate copolymer, allylsulfonic acid-acrylic acid-acrylamide copolymer, Na polyvinyl sulfonate, gelatin.
CC 54-2 (Extractive Metallurgy)
Section cross-reference(s): 60
ST copper recovery wastewater ultrafiltration; nickel recovery wastewater ultrafiltration; zinc recovery wastewater ultrafiltration; silver recovery wastewater ultrafiltration; metal complexing wastewater ultrafiltration
IT Gelatins, uses and miscellaneous
RL: PREP (Preparation)
(complexing agent for metal ion recovery from wastewater by ultrafiltration)
IT Polyamides, uses and miscellaneous
Urethane polymers, uses and miscellaneous
RL: USES (Uses)
(**membranes**, ultrafiltration, for metal ion recovery from wastewater)
IT Wastewater treatment
(ultrafiltration, metal ion complexing for)
IT 9003-01-4P, Poly(acrylic acid) **25053-27-4P**, Sodium poly(vinylsulfonate) **128481-97-0DP**, hydrolyzed **128481-98-1P**
RL: **PREP (Preparation)**
(complexing agent for metal ion recovery from wastewater by ultrafiltration)
IT 9004-35-7P, Cellulose acetate
RL: PREP (Preparation)
(**membranes**, ultrafiltration, for metal ion recovery from wastewater)
IT 25038-54-4, Nylon 6, uses and miscellaneous
RL: USES (Uses)
(oligomeric complexing agent, for metal ion recovery from wastewater by ultrafiltration)
IT 7440-02-0P, Nickel, preparation 7440-22-4P, Silver, preparation

7440-50-8P, Copper, preparation 7440-66-6P, Zinc, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(recovery of, from wastewaters, by complexing and ultrafiltration)

IT **25053-27-4P**, Sodium poly(vinylsulfonate) **128481-97-0DP**, hydrolyzed **128481-98-1P**
RL: **PREP (Preparation)**
(complexing agent for metal ion recovery from wastewater by ultrafiltration)

RN 25053-27-4 HCAPLUS
CN Ethenesulfonic acid, homopolymer, sodium salt (CA INDEX NAME)

CM 1

CRN 26101-52-0
CMF (C2 H4 O3 S)x
CCI PMS

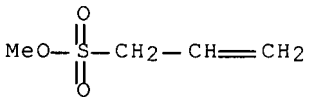
CM 2

CRN 1184-84-5
CMF C2 H4 O3 S

RN 128481-97-0 HCAPLUS
CN 2-Propene-1-sulfonic acid, methyl ester, polymer with 2-propenenitrile (9CI) (CA INDEX NAME)

CM 1

CRN 10307-31-0
CMF C4 H8 O3 S



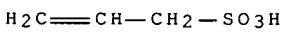
CM 2

CRN 107-13-1
CMF C3 H3 N

RN 128481-98-1 HCAPLUS
CN 2-Propenoic acid, polymer with 2-propenamide and 2-propene-1-sulfonic acid (9CI) (CA INDEX NAME)

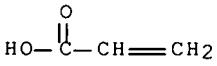
CM 1

CRN 1606-80-0
CMF C3 H6 O3 S



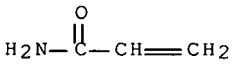
CM 2

CRN 79-10-7
CMF C3 H4 O2



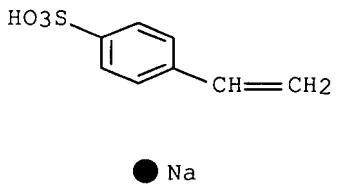
CM 3

CRN 79-06-1
CMF C3 H5 N O

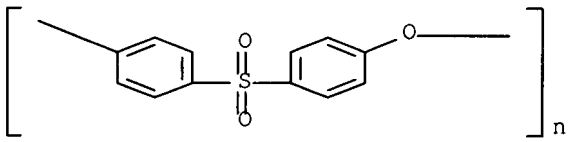


L66 ANSWER 32 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1989:479436 HCAPLUS Full-text
DN 111:79436
TI New ultrafiltration **membranes** made from modified aromatic polyethersulfone
AU Kai, M.; Ishii, K.; Honda, Z.; Miyano, T.; Tamada, M.
CS Res. Cent., Daicel Chem. Ind., Ltd., Himeji, 671-12, Japan
SO Natl. Res. Counc. Can., [Rep.] NRCC (**1989**), NRCC 29895, Adv. Reverse Osmosis Ultrafiltr., 15-33
CODEN: NRCEBF; ISSN: 0316-0114
DT Report
LA English
AB Hydrophilic-hydrophobic graft copolymers for ultrafiltration **membranes** were prepared from polyethersulfone Victrex 5003P (I), (chloromethyl)styrene, and one of the vinyl comonomers, N-vinyl-2-pyrrolidone (II), vinyl acetate (hydrolyzed after polymerization), Na styrenesulfonate, or acrylic acid. Each film prepared from these copolymers had glass temperature values >185° and contact angles on glass side surfaces <56°. **Membranes** made from casting solns. containing I and 15-20% II units had excellent thermal stability and improved hydrophilicity compared with I **membranes**.
CC 38-3 (**Plastics** Fabrication and Uses)
ST polyether polysulfone graft ultrafiltration **membrane**; hydrophilic hydrophobic graft copolymer **membrane**; vinyl monomer grafted polyether polysulfone; acrylic grafted polyether polysulfone

IT Polysulfones, compounds
RL: USES (Uses)
(polyether-, graft polymers, with vinyl monomers, hydrophilic-hydrophobic ultrafiltration **membranes**)
IT Polyethers, compounds
RL: USES (Uses)
(polysulfone-, graft polymers, with vinyl monomers, hydrophilic-hydrophobic ultrafiltration **membranes**)
IT Filters and Filtration apparatus
(ultra-, **membranes**, hydrophilic-hydrophobic, polyether-polysulfones grafted with vinyl monomers)
IT 88-12-0D, N-Vinyl-2-pyrrolidone, polymer with (chloromethyl)styrene and Victrex 5003P, graft 96-33-3D, polymer with (chloromethyl)styrene and Victrex 5003P, graft, hydrolyzed 108-05-4D, Acetic acid ethenyl ester, polymer with (chloromethyl)styrene and Victrex 5003P, graft, hydrolyzed **2695-37-6D**, polymer with (chloromethyl)styrene and Victrex 5003P, graft **25667-42-9D**, Victrex 5003P, polymer with (chloromethyl)styrene and vinyl compds., graft 30030-25-2D, polymer with Victrex 5003P and vinyl compds., graft
RL: USES (Uses)
(hydrophilic-hydrophobic ultrafiltration **membranes**)
IT **2695-37-6D**, polymer with (chloromethyl)styrene and Victrex 5003P, graft **25667-42-9D**, Victrex 5003P, polymer with (chloromethyl)styrene and vinyl compds., graft
RL: USES (Uses)
(hydrophilic-hydrophobic ultrafiltration **membranes**)
RN 2695-37-6 HCAPLUS
CN Benzenesulfonic acid, 4-ethenyl-, sodium salt (1:1) (CA INDEX NAME)



RN 25667-42-9 HCAPLUS
CN Poly(oxy-1,4-phenylenesulfonyl-1,4-phenylene) (CA INDEX NAME)



L66 ANSWER 33 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1987:516623 HCAPLUS Full-text
DN 107:116623
TI Ion exchange **membranes** for electrolysis
IN Oku, Toshio; Sada, Toshikatsu; Nishimura, Masakatsu
PA Tokuyama Soda Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62064834	A	19870323	JP 1985-277886	19851212 <--
	JP 01049743	B	19891025		
PRAI	JP 1985-277886		19851212 <--		

AB **Membranes** containing a porous layer (of fluoropolymers with water permeability >0.01 cm3/h.cm2.cm H2O and porosity >50%) and a cation exchange layer are useful for diaphragm-type electrolysis of an alkali metal salt for high-purity Cl. Thus, a 4-mm PTFE nonwoven fabric was H plasma-treated on 1 side, placed in the vapor of CF2:CFOCF2CF2COF with UV radiation, laminated with a 2-mil cation exchange **membrane** of perfluoro(3,6-dioxa-4-methyl-7-octenesulfonyl fluoride)- tetrafluoroethylene copolymer at 250° under pressure, and dipped in Fluorad FC-95 to give a hydrophilic **membrane** with good electrolysis effects.

IC ICM C08J005-22
CC 38-3 (**Plastics** Fabrication and Uses)
Section cross-reference(s): 72
ST ion exchange **membrane** electrolysis; PTFE nonwoven cation exchanger laminate; chlorine manuf electrolysis alkali chloride; alkali metal chloride electrolysis **membrane**
IT Fluoropolymers
RL: USES (Uses)
(ion exchange **membranes**, laminated with fluoropolymer layer, for electrolysis)
IT Ion exchangers
(**membranes**, laminates with fluoropolymers, for electrolysis)
IT 9017-45-2
RL: USES (Uses)
(PTFE nonwoven fabrics impregnated by, laminated with cation exchanger films, for electrolysis **membranes**)
IT 65722-59-0
RL: USES (Uses)
(fluoropolymer laminates, for electrolytes)
IT 9002-83-9D, Poly(trifluoroethylene chloride), sulfonated
RL: USES (Uses)
(ion exchange **membranes**, Daifloil 50, laminated with fluoropolymer layer, for electrolysis **membranes**)
IT 26654-97-7
RL: USES (Uses)
(ion exchange **membranes**, fluoropolymer laminates, for electrolysis)
IT 25684-76-8, Tetrafluoroethylene-vinylidene fluoride copolymer 66987-68-6 **110270-62-7D**, bromic acid-modified
RL: USES (Uses)
(ion exchange **membranes**, laminated with fluoropolymer layer, for electrolysis **membranes**)
IT 9002-84-0, Polytetrafluoroethylene
RL: USES (Uses)
(nonwoven fabrics, FA-10L, laminated with cation exchanger films, for electrolysis **membranes**)
IT 25067-11-2, Neoflon ND-1
RL: USES (Uses)
(nonwoven fabrics, Neoflon ND-1, laminated with cation exchanger films, for electrolysis **membranes**)
IT 10101-52-7, Zirconium silicate
RL: USES (Uses)
(porous **membranes**, laminated with cation exchanger films, for

electrolysis **membranes**)

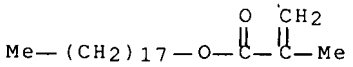
IT **110270-62-7D**, bromic acid-modified
RL: USES (Uses)
(ion exchange **membranes**, laminated with fluoropolymer layer, for electrolysis **membranes**)

RN 110270-62-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, octadecyl ester, polymer with butyl ethenesulfonate, diethenylbenzene and ethenylbenzene (9CI) (CA INDEX NAME)

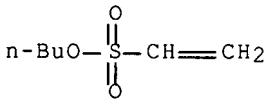
CM 1

CRN 32360-05-7
CMF C22 H42 O2



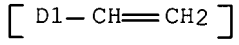
CM 2

CRN 3851-92-1
CMF C6 H12 O3 S



CM 3

CRN 1321-74-0
CMF C10 H10
CCI IDS

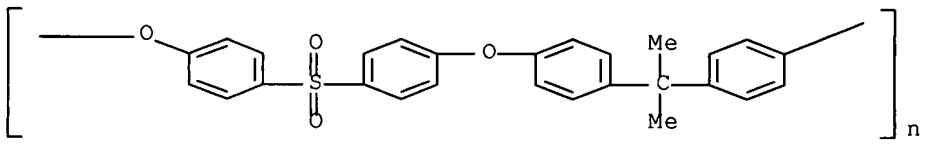


CM 4

CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

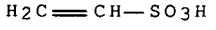
L66 ANSWER 34 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1981:104211 HCAPLUS Full-text
DN 94:104211
TI Clustering of ions in cation exchange **membranes**. A Moessbauer study
AU Heitner-Wirguin, C.; Bauminger, E. R.; Levy, A.; Labensky de Kanter, F.; Ofer, S.
CS Dep. Inorg. Anal. Chem., Hebrew Univ., Jerusalem, Israel
SO Polymer (**1980**), 21(11), 1327-9
CODEN: POLMAG; ISSN: 0032-3861
DT Journal
LA English
AB **Membranes** of perfluorosulfonic acid, poly(ethylenesulfonic acid) [**26101-52-0**], and a sulfonated polysulfone were studied at 0.05-85 K by Moessbauer spectroscopy to determine the distribution of ions in **membranes** equilibrated with FeCl3 in aqueous and MeOH solution Three types of Fe species were observed: small units or monomeric species with diameter <30 Å, ferric dimers bridged by O ions or OH-, and clusters of variable size. The percentages of the various species and the average sizes of clusters were evaluated.
CC 36-5 (**Plastics** Manufacture and Processing)
ST cation exchanger ion clustering; Moessbauer effect ion **membrane**; perfluorosulfonic acid cation exchange; sulfonic acid perfluoro cation exchange; polyethylenesulfonic acid cation exchange; polysulfone **membrane** cation exchange; ferric ion clustering **membrane**
IT Moessbauer effect
(of iron-57, in cation exchange **membranes**, ion clustering in relation to)
IT Sulfonic acids, uses and miscellaneous
RL: USES (Uses)
(perfluorinated, cation exchange **membranes**, clustering of ions in, Moessbauer study of)
IT Cation exchangers
(**membranes**, clustering of ions in, Moessbauer study of)
IT **25135-51-7D**, sulfonated **26101-52-0** 61261-17-4
65506-90-3 69913-41-3
RL: USES (Uses)
(cation exchange **membranes**, clustering of ions in, Moessbauer study of)
IT 20074-52-6, uses and miscellaneous
RL: USES (Uses)
(clustering of, in cation exchange **membranes**, Moessbauer study of)
IT **25135-51-7D**, sulfonated **26101-52-0**
RL: USES (Uses)
(cation exchange **membranes**, clustering of ions in, Moessbauer study of)
RN 25135-51-7 HCAPLUS
CN Poly[oxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (CA INDEX NAME)



RN 26101-52-0 HCAPLUS
CN Ethenesulfonic acid, homopolymer (CA INDEX NAME)

CM 1

CRN 1184-84-5
CMF C2 H4 O3 S



L66 ANSWER 35 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1980:515547 HCAPLUS Full-text
DN 93:115547
TI Semipermeable composite **membrane** for desalination
IN Kawaguchi, Takeyuki; Taketani, Yutaka; Sasaki, Noriaki; Minematsu, Hiroyoshi; Hayashi, Yuzuru; Hara, Shigeyoshi
PA Teijin Ltd., Japan
SO Eur. Pat. Appl., 93 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 8945	A2	19800319	EP 1979-301830	19790905 <--
	EP 8945	A3	19800806		
	R: DE, FR, GB				
	JP 55035910	A	19800313	JP 1978-108472	19780906 <--
	JP 61011642	B	19860404		
PRAI	JP 1978-108472	A	19780906 <--		

AB Semipermeable composite **membranes**, useful for desalination of saline or brackish water by reverse osmosis, comprised a thin semipermeable film of a crosslinked amine-modified acrylic polymer deposited on 1 side of a microporous substrate. Thus, a maleic anhydride-Me acrylate copolymer 8.6, triethylenetetramine 14.6, and H2O 150 g were heated 3 h at 50° under N to give an amine-modified polymer (I). A Dacron nonwoven fabric-reinforced microporous polysulfone **membrane** was dipped for 5 min in a 2% aqueous solution of I and drained for 10 min. The drained **membrane** was dipped for 5 min at room temperature in a 1.5% n-hexane solution of a 5:1 mixture of isophthaloyl chloride and trimesoyl chloride as a crosslinking agent, withdrawn, and drained 1 min in air to volatilize the solvent. The **membrane** was heated 10 min at 115-120° to give a deposit of isophthaloyl chloride-maleic anhydride-Me acrylate-triethylenetetramine-trimesoyl chloride copolymer [74797-86-7]. The composite **membrane** was subjected to reverse osmosis with 0.5% aqueous NaCl at 25° and 42.5 kg/cm2 G. It had initial water flux of 103 L/m2 h and salt rejection of 96.4% which, after 200 h, became 98 L/m2 h and 96.8%, resp.
IC B01D013-04; C08J005-18; C02F001-44

CC 37-3 (**Plastics** Fabrication and Uses)
Section cross-reference(s): 61

ST aminated crosslinked acrylic desalination **membrane**; isophthaloyl chloride copolymer desalination **membrane**; maleic anhydride copolymer desalination **membrane**; methyl acrylate copolymer desalination **membrane**; triethylenetetramine copolymer desalination **membrane**; trimesoyl chloride copolymer desalination **membrane**; polyester fiber polysulfone desalination **membrane**

IT Acrylic polymers, uses and miscellaneous
RL: USES (Uses)
(aminated and crosslinked, laminates with polyester fiber-reinforced polysulfones, **membranes**, for desalination)

IT Polysulfones
RL: USES (Uses)
(polyester fiber-reinforced, laminates with crosslinked aminated acrylic polymers, **membranes**, for desalination)

IT Polyester fibers, uses and miscellaneous
RL: USES (Uses)
(polysulfones reinforced by, laminates with crosslinked aminated acrylic polymers, **membranes**, for desalination)

IT **Membranes** and Diaphragms
(desalination, from polyester fiber-reinforced polysulfone laminates with crosslinked aminated acrylic polymers)

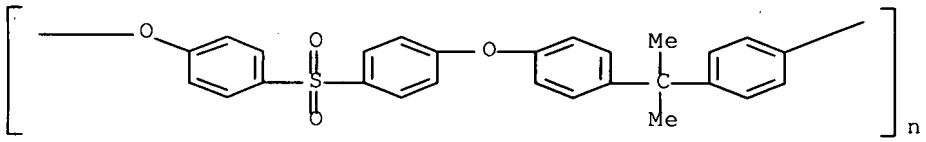
IT Water purification
(desalination-reverse osmosis, **membranes** for, from polyester-reinforced polysulfone laminates with crosslinked aminated acrylic polymers)

IT 99-63-8D, polymers with piperazinosulfonyl-substituted polysulfone, triethylenediamine, and trimesoyl chloride 112-24-3D, polymers with piperazinosulfonyl-substituted polysulfone, isophthaloyl chloride, and trimesoyl chloride 4422-95-1D, polymers with piperazinosulfonyl-substituted polysulfone, isophthaloyl chloride, and triethylenetetramine **25135-51-7D**, chlorosulfonated, aminated, polymers with isophthaloyl chloride, triethylenetetramine, and trimesoyl chloride
74791-30-3 74797-86-7 74797-87-8 74797-88-9 74797-89-0
74797-90-3 74797-91-4 74797-92-5 74797-93-6 74797-94-7
74797-95-8 74797-96-9 74797-97-0 74797-98-1 74797-99-2
74798-00-8 74798-01-9 74798-02-0 74798-03-1 74798-04-2
74798-05-3 74798-06-4 74798-07-5 74798-08-6 74798-09-7
74798-10-0 74798-11-1 74798-12-2 74798-13-3 74798-14-4
74812-96-7 74812-97-8 74812-98-9 74812-99-0 74813-00-6
74813-01-7 74813-02-8 74813-03-9 74813-04-0 74813-05-1
74813-06-2 74835-22-6 74835-23-7
RL: USES (Uses)
(laminates with polyester fiber-reinforced polysulfones, **membranes**, for desalination)

IT **25135-51-7D**, chlorosulfonated, aminated, polymers with isophthaloyl chloride, triethylenetetramine, and trimesoyl chloride **74813-01-7**
RL: USES (Uses)
(laminates with polyester fiber-reinforced polysulfones, **membranes**, for desalination)

RN 25135-51-7 HCAPLUS

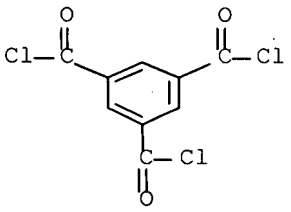
CN Poly[oxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (CA INDEX NAME)



RN 74813-01-7 HCAPLUS
CN 2-Propenoic acid, methyl ester, polymer with 1,3-benzenedicarbonyl dichloride, 1,3,5-benzenetricarbonyl trichloride, N,N'-dimethyl-1,2-ethanediamine and sodium 2-methyl-2-propene-1-sulfonate (9CI) (CA INDEX NAME)

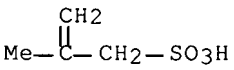
CM 1

CRN 4422-95-1
CMF C9 H3 Cl3 O3



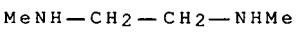
CM 2

CRN 1561-92-8
CMF C4 H8 O3 S . Na



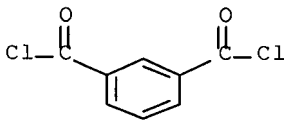
CM 3

CRN 110-70-3
CMF C4 H12 N2



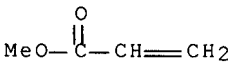
CM 4

CRN 99-63-8
CMF C8 H4 Cl2 O2



CM 5

CRN 96-33-3
CMF C4 H6 O2



L66 ANSWER 36 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1979:576356 HCAPLUS Full-text
DN 91:176356
TI Composite **membranes**
IN Klimmek, Albrecht; Krieger, Wolfram; Reiner, Roland
PA Battelle-Institut e.V., Fed. Rep. Ger.
SO Ger. Offen., 14 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

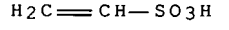
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2808222	A1	19790830	DE 1978-2808222	19780225 <--
	DE 2808222	B2	19810122		
	DE 2808222	C3	19810903		
	EP 3829	A1	19790905	EP 1979-100505	19790221 <--
	R: BE, CH, FR, GB, IT, NL, SE				
	JP 54126677	A	19791002	JP 1979-19596	19790221 <--
	US 4242159	A	19801230	US 1979-14952	19790226 <--
PRAI	DE 1978-2808222		19780225 <--		

AB A film of a soluble polymer, such as poly(vinyl alc.) (I) [9002-89-5], is coated with a solution of a polymer (e.g., polyamide) suitable for use as a separation **membrane**, and the solvent is removed to form a thin **membrane**. A porous, protective film is placed against the **membrane**, and the soluble polymer is dissolved to prepare a composite **membrane**, which is useful for desalting water, separating heavy metal ions, etc. Thus, a 30-μ I film was coated with a 5% solution of 4,6-dimethoxy-m-phenylenediamine-5-methoxyisophthalic acid copolymer [57693-70-6] in AcNMe2, the solvent was evaporated, a porous **polysulfone** ultrafiltration **membrane** was placed against the polyamide **membrane**, and the I film was dissolved to prepare a composite **membrane**, which gave salt rejection 93.3% and water flux 52.4 L/m2-day during desalting of a 3.5% NaCl solution by hyperfiltration at 25°/100 atmospheric In some cases, a plasticizer and/or a wetting agent is used in the film of soluble polymer to prepare thinner **membranes**.

IC C08J005-22
CC 37-2 (Plastics Fabrication and Uses)
Section cross-reference(s): 61
ST desalination **membrane** manuf; metal sepn **membrane** manuf; polyamide sepn **membrane** manuf; water desalting **membrane** manuf; hyperfiltration **membrane** manuf
IT Polyamides, uses and miscellaneous
Polyimides, uses and miscellaneous
RL: PREP (Preparation)
(**membranes**, composite hyperfiltration **membranes** containing, manufacture of)
IT **Polysulfones**
RL: USES (Uses)
(ultrafiltration **membranes**, composite hyperfiltration **membranes** containing, manufacture of)
IT Water purification
(desalination, composites **membranes** for, manufacture of)
IT 9002-89-5 9004-32-4
RL: USES (Uses)
(films, as support in manufacture of hyperfiltration **membranes**)
IT 9012-09-3P **26966-22-3P** 57693-70-6P 57693-74-0P 71766-07-9P 71766-13-7P
RL: **PREP (Preparation)**
(**membranes**, composite hyperfiltration **membranes** containing, manufacture of)
IT 9004-35-7P 25014-41-9P
RL: PREP (Preparation)
(ultrafiltration **membranes**, composite hyperfiltration **membranes** containing, manufacture of)
IT **26966-22-3P**
RL: **PREP (Preparation)**
(**membranes**, composite hyperfiltration **membranes** containing, manufacture of)
RN 26966-22-3 HCAPLUS
CN Ethenesulfonic acid, polymer with 2-propenenitrile (9CI) (CA INDEX NAME)

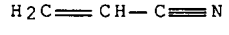
CM 1

CRN 1184-84-5
CMF C2 H4 O3 S



CM 2

CRN 107-13-1
CMF C3 H3 N



L66 ANSWER 37 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1978:444807 HCAPLUS Full-text

DN 89:44807
TI Cation-exchange **membrane**
IN Takahashi, Kenji; Kiyota, Toru; Asami, Shunichi; Shimizu, Akihiko
PA Toyo Soda Mfg. Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

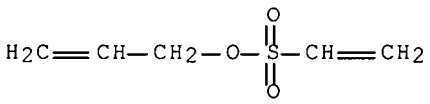
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 53029291	A	19780318	JP 1976-103599	19760901 <--
PRAI JP 1976-103599	A	19760901 <--		

AB Cation exchange **membranes** were prepared by forming a sulfone group-containing polymer on a perfluorocarbonsulfonic acid polymer **membrane**. For example, a CF2:CFOCF2CF(CF3)OCF2CF2SO2F-CF2:CF2 copolymer **membrane** was hydrolyzed to give a **membrane** with exchange capacity 0.92 mequiv./g, elec. resistance 2.0 Ω-cm2, and cation transport number 82%, which was immersed in a mixture of alkyl vinylsulfonate 25, divinylbenzene 1, and Et2O 74 parts at 250 for 5 h and heated at 90° for 25 h to give a **membrane** with elec. resistance 2.5 Ω-cm2 and cation transport number 93%.

IC C08J005-22
CC 37-3 (**Plastics** Fabrication and Uses)
ST fluoropolymer cation exchange **membrane**; sulfone polymer cation exchange **membrane**; polysulfone cation exchange **membrane**
IT Fluoropolymers
RL: USES (Uses)
(cation-exchanging **membranes** containing)
IT Sultones
RL: USES (Uses)
(polymers, cation-exchanging **membranes** containing)
IT Cation exchangers
(**membranes**, fluoropolymer and sultone polymer)
IT 26654-97-7D, hydrolyzed **66766-18-5**
RL: USES (Uses)
(cation-exchanging **membranes** containing)
IT **66766-18-5**
RL: USES (Uses)
(cation-exchanging **membranes** containing)
RN 66766-18-5 HCAPLUS
CN Ethenesulfonic acid, 2-propenyl ester, polymer with diethenylbenzene (9CI) (CA INDEX NAME)

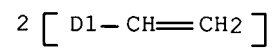
CM 1

CRN 7459-72-5
CMF C5 H8 O3 S



CM 2

CRN 1321-74-0
CMF C10 H10
CCI IDS



L66 ANSWER 38 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1977:469410 HCAPLUS Full-text
DN 87:69410
TI Electrodialysis composite resin **membranes**
IN Motani, Kensuke; Sata, Toshikatsu; Nakahara, Akihiko; Murata, Yasuo; Murakami, Shoji; Ito, Junichi
PA Tokuyama Soda Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 52068873	A	19770608	JP 1975-144592	19751205 <--
	JP 58042274	B	19830919		
PRAI	JP 1975-144592	A	19751205 <--		

AB Electrodialysis composite **membranes** are prepared by laminating a cation-exchange hydrocarbon **membrane** having sp. resistance ≤500 Ω-cm with a **membrane** having cationic groups with constant ion concentration ≥8.0 N. Thus, a viscous paste of styrene 60, divnylbenzene 10, dioctyl phthalate 40, a com. chlorosulfonated polyethylene 10, and dicumyl peroxide 2 parts was coated on a polypropylene cloth, heated 24 h at 120°, and the resultant polymer film was sulfonated by immersing 92 h at 30° in 92% H2SO4 to give a cation-exchange resin **membrane** having constant ion concentration 3.8 N. The cation-exchange **membrane** was swelled with dioxane, coated on 1 side with a monomer mixture of styrene 20, methacrylic acid 20, divinylbenzene 15, and benzophenone 1 part, covered with a glass plate, and exposed to UV rays to give a 2-layer cation-exchange resin **membrane** with elec. resistance 1.3 Ω-cm, transference number 0.92, and high constant ion concentration
IC C25B013-08
CC 37-3 (**Plastics** Fabrication and Uses)
ST electrodialysis composite **membrane**; cation exchange resin **membrane**
IT Rubber, synthetic
RL: USES (Uses)
(chlorosulfonylated polyethylene, polymers with divinylbenzene and styrene, graft, sulfonated, laminated cation-exchange **membranes** containing, for electrodialysis)
IT Cation exchangers
(laminated, as electrodialysis **membranes**)
IT 100-42-5D, polymer with chlorosulfonylated polyethylene and divinylbenzene, graft, sulfonated 111-40-0D, reaction products with glycidyl methacrylate-methacrylic acid-styrene copolymer 1321-74-0D,

polymer with chlorosulfonylated polyethylene and styrene, graft, sulfonated 9002-88-4D, chlorosulfonylated, polymer divinylbenzene and styrene, graft, sulfonated 9017-42-9 9020-13-7 58353-15-4D, reaction products with diethylenetriamine 63793-51-1D, graft, sulfonated 63793-55-5D, sulfonated **63793-56-6D**, hydrolyzed 63793-57-7D, graft, sulfonated 63828-57-9D, graft, sulfonated 63861-96-1D, graft, sulfonated
RL: USES (Uses)
(laminated cation-exchange **membranes** containing, for electrodialysis)

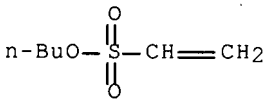
IT **63793-56-6D**, hydrolyzed
RL: USES (Uses)
(laminated cation-exchange **membranes** containing, for electrodialysis)

RN 63793-56-6 HCAPLUS

CN Ethenesulfonic acid, butyl ester, polymer with diethenylbenzene and ethenylbenzene (9CI) (CA INDEX NAME)

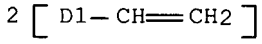
CM 1

CRN 3851-92-1
CMF C6 H12 O3 S



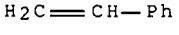
CM 2

CRN 1321-74-0
CMF C10 H10
CCI IDS



CM 3

CRN 100-42-5
CMF C8 H8



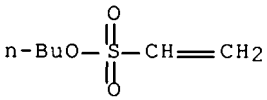
L66 ANSWER 39 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1977:130036 HCAPLUS Full-text
DN 86:130036
TI Brine electrolysis in a cell employing an ion-exchange **membrane** and a diaphragm
IN Motani, Kensuke; Sata, Toshikatsu; Nishimura, Masakatsu; Kuramoto, Nobuyuki; Morimoto, Eiji
PA Tokuyama Soda Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 51134399	A	19761120	JP 1975-58698	19750519 <--
PRAI	JP 1975-58698	A	19750519 <--		

AB Brine electrolysis is carried out in a 3-compartment cell using a cation-exchanging **membrane** to partition off the cathode chamber and a diaphragm to partition off the anode chamber, the intermediate chamber being charged with a reducible material. Thus, lauroyl peroxide 2 and Hypalm 48 (chlorosulfonated polyethylene, du Pont) 10 parts were added to a mixture of H2C:CMeCO2H 15, styrene 30, Bu vinylsulfonate 20, and H2C:CMeCO2Bu 20 parts to give a viscous liquid A poly(vinyl alc.) woven fabric was dipped into the liquid, degassed, covered with cellophane, heated for 24 h at 100°, then hydrolyzed in 8% of KOH to yield a cation exchange **membrane**. A 3-compartment cell was then obtained by using the above **membrane** and a diaphragm obtained from a porous poly(tetrafluoroethylene) film by impregnating with Na silicate. Saturated brine was allowed to flow through the anode and intermediate chambers, and 6.0N NaOH was recovered from the cathode chamber.
IC C25B001-46
CC 72-10 (Electrochemistry)
ST brine electrolysis polymer diaphragm; methacrylate styrene vinylsulfonate polymer; polyvinyl alc Hypalon **membrane**; fluoroethylene polymer **membrane**
IT Rubber, synthetic
RL: DEV (Device component use); USES (Uses)
(chlorosulfonated polyethylene, diaphragms containing, for brine electrolytic cells)
IT Electrolytic cells
(diaphragm, methacrylate-styrene polymer, for brines)
IT 9002-84-0 9002-89-5 **61041-86-9**
RL: DEV (Device component use); USES (Uses)
(diaphragms containing, for brine electrolytic cells)
IT 1310-73-2P, preparation 7782-50-5P, preparation
RL: PREP (Preparation)
(manufacture of, diaphragms for brine electrolytic cells for)
IT **61041-86-9**
RL: DEV (Device component use); USES (Uses)
(diaphragms containing, for brine electrolytic cells)
RN 61041-86-9 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with butyl ethenesulfonate, butyl 2-methyl-2-propenoate and ethenylbenzene (9CI) (CA INDEX NAME)

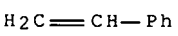
CM 1

CRN 3851-92-1
CMF C6 H12 O3 S



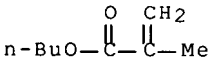
CM 2

CRN 100-42-5
CMF C8 H8



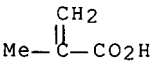
CM 3

CRN 97-88-1
CMF C8 H14 O2



CM 4

CRN 79-41-4
CMF C4 H6 O2



L66 ANSWER 40 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1977:6250 HCAPLUS Full-text
DN 86:6250
TI Cation exchange resin **membranes**
IN Motani, Kansuke; Sata, Toshikatsu; Murakami, Shiyoji; Itou, Jiyunichi; Tanaka, Katsunori
PA Tokuyama Soda Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 51093791	A	19760817	JP 1975-18721	19750217 <--

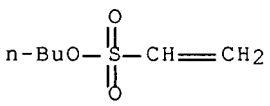
JP 58002969 B 19830119
PRAI JP 1975-18721 A 19750217 <--

AB A monomer mixture containing a CO2H-containing vinyl compound is adhered to a H2O-insol. alc. OH-containing polymeric compound as reinforcing material and polymerized to give an ion exchange resin **membrane** (CO2H groups ≥10% of the total ion exchange capacity). Thus, a mixture of styrene 20, divinylbenzene 10, methacrylic acid 20 and stearyl methacrylate 20 parts was treated with SBR and 1% (based on the total monomer mixture) Bz2O2 to give a pasty material which was coated on a poly(vinyl alc.) (I) cloth acetalated (20%) with HCHO, polymd 24 hr at 80° immersed 24 hr in 4N NaOH, giving a cation exchange resin [61095-87-2] **membrane** with elec. resistance (0.5 NaOH, 25°) 12 Ω, diffusion coefficient for NaOH 2.1 + 10-9 cm2/sec, and permeability to H2O (10 kg/m2) 2 + 10-10 ml/kg-sec compared with 10.2 Ω, 6.2 + 10-8 cm20sec, and 5.3 + 10-8 ml/kg-sec, resp., for a control when polypropylene mesh instead of I cloth was used as reinforcing material under the same conditions.

IC C08J005-22
CC 37-3 (**Plastics** Fabrication and Uses)
ST acrylic polymer cation exchanger; reinforcing material cation exchanger; **membrane** cation exchange; polyvinyl formal support **membrane**
IT Cation exchangers
(**membranes**, acrylic polymers for, reinforced by vinyl polymers)
IT 24937-78-8D, saponified
RL: USES (Uses)
(acrylic polymer **membranes** reinforced by, for cation exchangers)
IT 9017-42-9 **61041-86-9** 61095-85-0 61095-86-1 61095-87-2
RL: USES (Uses)
(**membranes**, vinyl acetal polymer-reinforced, for cation exchangers)
IT **61041-86-9**
RL: USES (Uses)
(**membranes**, vinyl acetal polymer-reinforced, for cation exchangers)
RN 61041-86-9 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with butyl ethenesulfonate, butyl 2-methyl-2-propenoate and ethenylbenzene (9CI) (CA INDEX NAME)

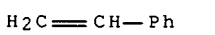
CM 1

CRN 3851-92-1
CMF C6 H12 O3 S



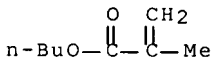
CM 2

CRN 100-42-5
CMF C8 H8



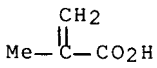
CM 3

CRN 97-88-1
CMF C8 H14 O2



CM 4

CRN 79-41-4
CMF C4 H6 O2



L66 ANSWER 41 OF 46 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1976:419043 HCAPLUS Full-text
DN 85:19043
TI Separation of citrate or citric acids from fermentation solutions
IN Walch, Axel; Klimmek, Albrecht; Wollmann, Klaus
PA Benckiser, Joh. A., G.m.b.H., Chemische Fabrik, Fed. Rep. Ger.
SO Ger. Offen., 24 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2450670	A1	19760429	DE 1974-2450670	19741025 <--
	GB 1494414	A	19771207	GB 1975-32839	19750806 <--
	JP 51082218	A	19760719	JP 1975-97683	19750813 <--
	FR 2288728	A1	19760521	FR 1975-32107	19751021 <--
	FR 2288728	B3	19800425		
	AT 345761	B	19781010	AT 1975-8053	19751022 <--
	BE 834848	A1	19760216	BE 1975-161232	19751024 <--
PRAI	DE 1974-2450670	A	19741025 <--		

AB Selectively permeable **membranes** are described which can be used for the concentration and purification of citric acid [77-92-9] and isocitric acid [320-77-4] by ultrafiltration. Thus, an aqueous solution of 25% Na vinylsulfonic acid 100, acrylonitrile 7, K2S2O8 0.24, NaHSO3 0.01 g, and dimethylsulfoxide 2 ml were mixed, adjusted to pH 1, and allowed to polymerize at 5° for 48 hr. The polymer was precipitated with MeOH, washed with water, and dissolved in cold N-methylpyrrolidone. A 10% solution was then formed in a film 5 μm thick with a tensile strength of 266 kg/cm2 (moist, 20°) and a swelling capacity of 10%. This film tested on a solution of tri-Na citrate